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BASIC QUESTIONNAIRE DESIGN

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PREFACE

With escalating demands for information, the survey questionnaire is gaining more and more prominence as a tool of research. Questionnaire design, many researchers insist, remains in the realm of art, eluding reduction to any simple collection of scientific principles. Yet, as for any art, there are basic skills which can be learned, and which need only be supplemented by common sense and a certain degree of scientific sophistication.

This handbook has been prepared as a reference manual for the series of workshops and seminars on basic questionnaire design which are conducted by the Federal Statistical Activities Secretariat and the Census and Household Surveys Methodology Division of Statistics Canada. These workshops and seminars are held several times each year in response to requests from survey sponsors in the federal government. Although intended primarily for these presentations, the handbook was also prepared to be self-contained where the reader has not attended a workshop or seminar. Of course, the material contained within is enhanced by such attendance.

The handbook is intended for general use by persons with limited experience in survey research, and who are faced with the task of developing a questionnaire. The scope of the handbook is restricted to those topics in survey design that relate specifically to the development of a questionnaire. As a result, topics such as statistical analysis, interviewer training, and sample design are not given in detail, except as they relate to questionnaire design. The treatment of the various topics is non-technical but references are provided for those who wish to pursue any topic in greater detail.

The following members of the Federal Statistical Activities Secretariat contributed to the preparation of this handbook: Cynthia P. Baumgarten (editor), Charles S. Lyon (Sections 1, 2, and 3), Philip R. Stevens (Sections 5 and 9), and Edward J. Wilhelm (Sections 7 and 8, editor). In addition, Ruth M. Corbin of the Trans-Canada Telephone System (Section 4), and Larry A. Swain of the Census and Household Surveys Methodology Division of Statistics Canada (Sections 1, 6 and 10) made contributions.

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BASIC QUESTIONNAIRE DESIGN HANDBOOK

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1. MEETING INFORMATION NEEDS

A common procedure in research is to realize that a problem exists and without a particularly detailed analysis of that problem, to begin to draft a questionnaire. Often, this is associated with the general idea to "do a survey". There are two basic errors in this process. The first is in attempting to develop a questionnaire at too early a stage in the research. Many questionnaire design problems depend for their solution on the thinking and analysis put into the problem even before the consideration of a questionnaire and certainly before the drafting of a preliminary version of a questionnaire. The second basic error lies in deciding immediately that a survey is the means for solution of the problem. A danger exists in making this decision early in the planning in that the problem itself may get lost within the various stages of survey development, that the survey may not even solve the whole problem, or that the survey may be aimed at solving the wrong problem.

The research method as proposed below is presented as a problem solving process, requiring that knowledge and analysis be applied long before a questionnaire is considered or a procedure for data collected is decided upon.

1.1 Recognition that a Problem Exists

The first and most basic step in problem solving is the realization that a problem may exist. The problem may be an unexpected deviation from what should be occurring in a process or the necessity to evaluate a government socio-economic program or a specific request for data. An initial statement of the problem may be broad or narrow, general or specific.

1.2 Clarification and Analysis of the Problem

The recognition and initial statement of a problem does not necessarily mean that one can begin immediately to solve it. Usually, the problem is not yet stated in researchable terms. For example, "evaluation" may have many different meanings, some of which may be researchable and some of which may not be. Broad terms such as "the transportation problem", "attitudes concerning capital punishment", and "service to the public" are often all that the research has as a starting point.

The assimilation of background information concerning the problem then becomes essential as a means of clarifying and expanding it into its various components. The formulation of the research problem involves consideration of some of the following details: a statement of what the problem is, a statement of what the problem is not (these aid in the definition of the limits of the problem), a necessary step in the determination of whether the problem can be solved (either fully or partially and in what depth), possible causes of the problem, the relationship of the problem to previous research, the relationship of the problem to

pre-determined goals, the relationship of the problem to a theoretical framework, and alternate hypotheses. The researcher is now in a position to sort out the many aspects of the problem, to choose among them and to specify them in terms which can be research (operational terms).

The foregoing may require background reading, discussion with experts, or intense introspective study. However, the more detailed the researcher can be at this point, the better defined will be the problem. As a result, the determination of the steps which follow will be more simplified and directed, leading eventually to the resolution of the problem or the decision that it can't be resolved.

1.3 Determination of Information Needed

Once the problem has been clarified and analysed, the researcher must then determine whether further information is required to answer the problem. If so, the questions such as what information is needed, from whom or where the information should be obtained, the uses to which the information will be put and how the information will contribute to solving the problem can be answered. Answering these questions will require that the objectives for data collection be stated and linked directly to the broader research problem. Since some objectives will be more important than others, the researcher should assess the priority of each objective.

The above is usually an iterative process. Once consideration of the information needed takes place, it may be found that the original problem was not specific enough to fully indicate what information would answer it. This iterative property is shown in figure 1.1

1.4 Means of Acquiring Information

In general, data may be obtained from three sources: documents, records or other existing information: by observation and by questioning.

Documents, records and other existing information can take many forms including letters, family records, institutional records (hospital records, for example), administrative records (sales figures, bank accounts, personnel records), published and unpublished reports, and data collected for previous studies. All organizations, for example, maintain some records on their personnel and products and these records may provide data for study. (The records are distinguished from data as they are produced for reasons other than aggregate study.) Similarly, data which have been gathered in previous studies, surveys and so on may be amenable to secondary analysis. The Census of Population and Housing is a primary example.

Documents and other existing information may often replace the need for collecting new information, and at times may provide the only source of information, for example, where respondents are no longer alive, or where the information could not possibly be recalled in sufficient detail. There are, of course, certain characteristics of documents, records, and

existing data which must be taken into account to ensure the information is suitable for the purpose. Timeliness, scope of coverage of information and population, reliability of recording, and the definitions and meanings of terms must be known and evaluated in retrospect, in much the same way as plans for a new collection are analyzed.

A concrete example of the use of documents is a study which was carried out in a major metropolitan area. The objective was to determine hospital service areas and the manner in which people in the city used the various hospitals. The first decision was to conduct a sample survey and ask residents directly about their use of the hospitals. A pretest showed that only a small proportion of the population used the hospitals, that they had difficulty remembering dates of use, names of hospitals and reasons. In fact, people who had been admitted to hospitals had only vague technical knowledge of why they had been admitted and what services were used. Faced with insurmountable problems of sampling, knowledge, recall and accuracy, it was decided to use hospital records. This had the advantage of completeness, accuracy and records which were available for a long period of time. It was possible to obtain acceptable results from a small number of records (2,500 or less per hospital) which showed the service areas, reasons for use and characteristics of the user population.

The cost of the study was reduced from \$200,000. to approximately \$25,000. Not all uses of documents are so dramatic but all possibilities should be considered.

The method of obtaining data by observation also includes a variety of approaches. It generally covers methods which do not involve direct questioning of the subjects of observation, but the concept may include indirect methods of questioning, particularly where the observer is participating in some kind of social group in order to understand the workings of the group. In general, however, observation is considered to be a form of data-gathering where the subject of observation is not directly questioned to obtain the information.

In some very obvious instances, observation must be used. For example, no questioning is possible in natural and physical sciences inquiries. Where the respondent is not able to speak (small children), observation may be the only viable method. In other instances, observation may provide adequate data or may be desirable over questioning. For example, traffic counters provide a more accurate measure of flows and volumes than would direct questioning of respondents about their movements. Similarly, videotape or still photographs will provide more accurate information about congestion than will questioning. Behaviour may differ with the presence of an interviewer and often, questions about behaviour are answered with socially desirable responses (the answer conforms with what is expected as "proper" social behaviour, e.g., one does not readily admit to abusing children or alcohol, so the incidence is underreported). Observation often provides quite different results. Observation may be obtrusive or unobtrusive in the sense that subjects are aware that they are being observed, or are unaware. In fact, some observational techniques gather data from traces or remains of physical evidence in much the same way as

do archeologists. A questionnaire study of alcohol consumption in a legally "dry" area came to the conclusion that people in the area drank little or no alcohol. An observation study of garbage cans indicated a significantly higher consumption.

The major difficulties with observational techniques are the extent to which observers affect the behaviour of those being observed by their presence, the development of an analytic scheme to adduce meaning to the observations, and the development of accurate recording sheets to record the behaviour. There are various methods to counteract the obtrusiveness of observation, and meanings and recording schemes are usually based on theoretically or empirically grounded hypotheses. The most simple are, of course, those which require only counting to provide a cross-sectional view of an existing situation. As observation is often more accurate and less costly than questioning, observational methods may be considered as possible alternatives, or for use in conjunction with other techniques.

Questioning procedures cover a range of information gathering which requires participation of the respondent in providing the information directly. For our purposes, questioning includes both interview and self-administered response forms (commonly called questionnaires). Questioning may take a form ranging from unstructured exploration of topics such as obtaining life histories or exploring psychologies through psychoanalysis, through to highly structured formats such as a self-administered mailed questionnaire which requires the respondent to choose one of a fixed set of answers.

The amount of structure depends to a large extent on the nature and extent of the researcher's knowledge and the range of responses which will adequately answer the questions. Where, for example, little is known about a topic, the responses are likely to be more open to the interpretation and choice of the respondent. At an extreme, respondents are given total freedom to develop answers, as in psycho-analysis. The main emphasis of the following chapters is on questioning through the use of structured interviews of self-administered questionnaires and further discussion of these approaches will be left for those chapters. Often, however, there are situations where insufficient knowledge of a topic requires an unstructured approach to develop more information. In addition, the structured interview or questionnaire is most amenable to use in a "mass interview" situation, where the goal is mainly to develop generalizations about an aggregate rather than to understand a specific situation or develop individual case information. Obviously, generalizations cannot be made based on non-standardized data, but there are instances where generalizations are not the goal and an unstructured format may be considered. Typically, these situations arise in policy formulation where experts or holders of power may exert influence regardless of mass opinion, or where their guidance or expertise is relevant. It is hardly relevant to know, for example, what the majority of students want, when educational policy makers in power have a different view.

One type of unstructured questioning format deserves mention here because it is used widely. Most forms of questioning imply a one-to-one interaction between researcher and respondent. The "group interview", on the other hand, treats a number of people at once, usually raising a topic and asking the group members to express their opinions. This format may be used as a preliminary attempt to understand the thoughts and opinions of people, and is more economical than extensive exploration of the same topic with the same number of respondents individually. The existence of the group poses some unique problems in interpretation of the results, in that social influences on respondents are quite different from a one-to-one encounter, and it is impossible to judge such things as knowledge, salience and intensity of feeling of individual respondents. The technique is, however, a relatively economical way to formulate hypotheses about a topic, and some researchers believe that the effect of group dynamics brings out information which may not be obtained in individual interviews.

Not all of the available methods of gathering information have to be considered for every study. Preliminary evaluation of the problem serves to eliminate many from consideration at the outset. There are usually several which remain as possibilities, each with their own characteristics, and a choice must then be made. While this booklet deals with a necessarily limited scope, the researcher should be aware of alternatives, and reject them on grounds of choice rather than ignorance.

The choice of a particular technique for asking questions and a procedure for data collection will depend on the type of information desired, the persons from whom or the location from which it is collected, the purpose of the collection, the specific uses and analysis, and any resource constraints (cost, time, or availability of manpower). In fact, the constraints may be such that the researcher is forced to choose a less than ideal technique or procedure, to choose to satisfy only those objectives with a relatively high priority, or to revise the objectives of the research.

In the case where the research problem is the evaluation of a government program, the determination of the method of data collection may be simplified and more efficient if the evaluation of the program is considered at the time of the program planning itself rather than as an afterthought.

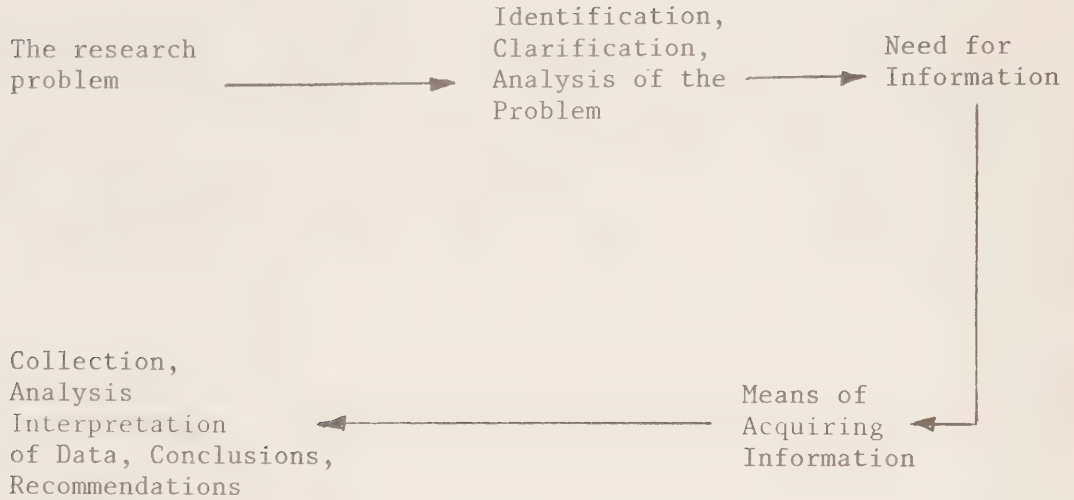
1.5 Collection of Data and Their Assembly into Useable Information

Once data have been collected and processed, the researcher is in a position to analyse the data relative to the original research problem. The analytical process will be greatly simplified and the information collected more relevant to the problem, if one has considered the uses to which the data will be put prior to the data collection itself.

A final step is the interpretation of the results. Conclusions are drawn and recommendations made with direct relation to the resolution of the research problem and the original hypotheses. This in turn may suggest further research.

Figure 1.1 below outlines the research method described above as a circular process.

Figure 1.1: The Research Method



1.6 References

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2. THE SURVEY QUESTIONNAIRE

The main topic of this booklet is questionnaire design of a particular type. Obviously, a questionnaire (in the sense of a set of questions or some form of recording instrument) is necessary whether the source of data is documentary, observational or a result of questioning. Within the range of techniques used in questioning, the "questionnaire may range from an undefined set of topics through to a highly structured set of questions with no options for response other than those listed. The survey questionnaires on which we focus falls at the structured end of the range. It is a specific instrument which is structured so that the same, standardized questions are asked of everyone relevant to the study. An attempt is made to make interviewing a routine task which does not require interviewers to make decisions and interpretations in the course of the interview, and in the most standardized or "mechanized" form, the questionnaire is "self-administered", i.e., filled in completely by the respondent without the aid of an interviewer.

The survey questionnaire has an advantage over some other techniques in that it provides standardized data which are amenable to aggregate analysis to describe group characteristics. It may be administered to large numbers of people without the need for highly creative interviewers because the interviewer is not required to participate in the development of the information. Usually, the cost per interview is less the more structured the questionnaire becomes.

On the other hand, the survey questionnaire is by no means a universal tool for gathering information. There are times when data are not available to respondents (e.g., certain types of administrative data cannot be obtained from respondents) or when data may be expected to be distorted (e.g., reports on behaviour) particularly where illegal or socially undesirable behaviour is involved. There is also lack of agreement on whether attitudinal information is amenable to collection through survey questionnaires though certainly there are techniques which are used to gather opinion and attitude information through surveys. There are restrictions in the type of data which may be obtained, and the exploration of topics from the point of view of the respondent is severely limited. Finally, although the cost per interview may be relatively low, mass interviews usually cover a large population, and the structured nature of the questionnaire requires a great deal of thought and planning as well as strict field controls to ensure that questions are appropriate and the data are accurate. The decision to use a survey questionnaire to obtain data should, therefore, not be taken lightly.

2.1 Use of the Survey Questionnaire

The survey questionnaire is generally well suited to situations where the topic can be restricted in scope, and requires "factual" or "objective" information needed for the purpose at hand, should ask only questions which the respondent is known to be able to answer, require only a 'yes' or 'no', a number, or similarly simple response, and be amenable to answer with a truthful and unbiased response in neutral terms. Much of questionnaire design is devoted to attempting to achieve such objective results.

3. PLANNING A SURVEY

The design of a survey questionnaire is intimately related to and flows from the overall survey design. The following section outlines the planning stages which lead to the design and testing of specific questionnaire items (questions).

3.1 Preparation of Objectives

The preparation of objectives for the survey is perhaps the most important step in designing a survey questionnaire. It is also the point on which most designs fall short. There are two general cautions to be made about preparing survey objectives: survey objectives are not necessarily as broad as overall information needs; survey objectives should never be stated in terms of "gathering information".

The objectives of the survey evolve from consideration of the general problem, but usually the general problem covers a wider range of topics and considerations than will the survey. The questionnaire is naturally limited in the extent and type of data which can be collected, so that many aspects of a topic cannot be considered (though other data and techniques may be used in conjunction with a survey to cover other aspects) and several different surveys may form parts of the same project.

It is difficult to deal with the setting of objectives in abstract form, as each problem will require unique consideration. In general, however, the range of possible objectives should be written down and considered for suitability. It has been found that an effective way to state objectives is in terms of the nature of conclusions one wants to make. For example, a vague objective such as "to gather site utilization data for site planning", can be clarified by considering what the planning decisions will be. These may be: to decide whether to expand the parking list; to decide whether to clarify the interpretation facilities so that more people understand them; to determine whether people understand the interpretation; to advertise the site in potential tourist areas; or any number or combination of other objectives. Consideration should also be given to the accuracy of the data required to meet the objectives (or to make the decisions). For example, if one of the objectives is "to decide whether to expand the parking lot", an auxiliary question the research will have to ask is "under what conditions will the decision to expand the parking lot be 'yes'?" The answer may be something like, "if the overflow is 50 vehicles or more at any time", or "if there is any overflow", or, "if the overflow reaches 10 or more twice during any day". Any number of other criteria may be in the mind of the researcher or planner and those should be made as explicit as possible at the beginning. Where decisions are at issue, the decision criteria will become more important and more specific as reiteration through the various design stages takes place.

Finally, it is usually profitable to consider the importance of the accuracy of estimates as part of the setting of objectives. Estimates are usually a feature of survey data because some form of sampling is almost always involved and estimates always involve a range of error within which one is uncertain whether the conclusion is correct. That is, in

the parking lot example, the measurement of the decision criterion (or criteria) may be subject to error due to sampling procedures and it is, therefore, important to consider what the extent of tolerable error is. This may affect the cost, collection method, sample size and sample design in a variety of ways. In operational terms, tolerable error can be evaluated by asking oneself (or the planner) "what are the consequences of making an incorrect conclusion?" This can be either to expand the parking lot when it is not necessary (because the estimate is higher than the actual criterion) or not expanding when it should be (i.e., the estimate is lower than the actual criterion). In the example above, the tolerable range of error, or the "chance" one is willing to take of making an incorrect conclusion from the data, may be quite large. In other circumstances, for example where a survey may be done to determine the linkage between exposure to carcinogens and the incidence of cancer or other morbidity, an incorrect conclusion may have extremely serious consequences. While it may not be necessary in every project, the services of a competent sampling statistician are often invaluable at the objective setting stage and should be definitely considered for all large or complex projects.

It should be noted that these objectives may not be mutually compatible, so that designing a single survey to cover all of them at once may be impossible. While some of the objectives may be jointly met with the same data, others may require quite different approaches, and decisions may have to be made regarding which topics are most relevant, which are most important, and perhaps which may be acted upon. Budget and time constraints enter into this decision, as does consideration of the relative usefulness of information in practical terms. Obviously, the best information in the world about problems over which one has no control has questionable value.

Thus, the relevance of each topic or potential objective must be determined and evaluated. The determination of objectives is often an iterative process, in which some objectives are stated, evaluated and chosen, examined for feasibility, operationalized in a draft questionnaire, then restated and re-evaluated until a final set is determined. No matter how many circuits are taken and how many different objectives are considered, at each stage the statement of survey objectives provides the core definition to everyone concerned, and provides a reference point to ensure that the more detailed development of plans is relevant.

3.2 Development of General Plan for the Survey

There are a number of factors which are involved in the general survey plan, and these flow naturally from the objectives. The general survey plan provides the outline of decisions to be followed when the survey is detailed and conducted.

3.2.1 Subject Content

The general subject content evolves from the statements of use of the data. Usually one begins with a broad statement of subject areas. For example, if one of the objectives is to decide where to place advertisements for an attraction, one of the subject areas is likely to be the

place of origin of visitors. At this stage, specific question wording is not at issue, as this will be affected by other considerations including the survey population, collection method and level of detail required to specify or "measure" place of origin. In other words, there is usually not a straightforward transfer of objectives into questions for a questionnaire, but a logical development of different aspects of the plan so that questions are translated from general statements into operational descriptions of the data required.

3.2.2 Survey Population

The survey population is the general group or category of respondents who are relevant to the survey objectives. The population may consist of individuals, households, vehicles, parties, businesses and so on, which have certain characteristics. A specific consideration of the survey population must be made, and the population defined specifically. Decisions about which population is appropriate to meet the desired objectives will have to be taken. To follow the advertising example, decisions will have to be made about what, specifically, is the nature of the population that can provide information on where to advertise. This may be site visitors, residents of locations where site visitors originate, residents of locations where site visitors do not originate, all tourists or some other category.

3.2.3 Size of the Survey

This is determined by the accuracy and confidence level required, the number and size of sub-populations for which information is required, the sample design, the complexity of information and, ultimately, possible budget and time limitations. Here as in other aspects of design, one can expect an iteration between the setting of objectives, consideration of accuracy, restating and further specifying objectives, and so on, until the objective is clear enough to decide on the size required. In the process, budget and time considerations serve as limiting factors. For example, a particular combination of accuracy and topic coverage requirements may be too expensive. Objectives may have to be modified or dropped, or subjects may have to be redefined.

3.2.4 Collection Methods

Answers to questionnaires are generally obtained either by an interviewer asking questions and recording responses (interview), or by respondents reading the questions and recording their own responses. (A variation on the latter type is the "diary", where respondents record events as they happen. The diary is, however, structured to record only events of interest to the study.)

An interview may be conducted over the telephone or face-to-face. Face-to-face interviews may be conducted in many locations. Self-administered questionnaires or diaries may be mailed to addresses, hand delivered,

handed out at different sites or simply left in certain locations. The responses may be picked up, mailed back, dropped in a return slot, telephoned to a certain location, or related to an interviewer. Combinations of any of these can be used in a single survey.

Five factors are involved in the choice of collection methods: the probable response rate, the expense, the accuracy required, the complexity of information it is necessary to obtain, and the speed with which answers must be obtained. There are no hard and fast rules to follow, but there are some general guidelines. Usually, higher response rates and more complex information can be obtained with interviews than with self-administered questionnaires. Telephone interviews fall somewhat in between face-to-face and impersonal methods. On the other hand, costs are higher per questionnaire as personal contact increases. Obviously the complexity of information required and the number of completed questionnaires required, plus considerations of bias due to non-response will be major factors in determining whether a given method is likely to achieve results adequate to meet the objectives. One, or a number of collection methods may be considered and the trade-offs between costs and objectives evaluated.

3.2.5 The Draft Plan

A draft plan should be drawn up which states the specific survey objectives, decisions on the foregoing factors, alternatives and considerations which have to be made to take a decision, and estimates of timing and costs involved in following the plan. The draft plan is necessary even for small surveys, though perhaps not as many alternatives will have to be considered.

In some cases, it may be possible to decide on all of the relevant factors at the outset. In others, however, it can be expected that the plan may undergo several drafts as alternatives are checked for feasibility and topic areas more firmly defined. The draft plan is the basis on which the survey will be modified and designed in detail.

3.3 Exploration and Testing of Sources and Methods

To some extent, all features of the draft plan are tentative until they are explored for feasibility. Exploration of the situation envisaged in the draft plan may uncover different sources of information which are more fruitful than the ones initially chosen. The supposed population may prove not to have information on the general topic areas of interest. The methods of sampling, data collection and so on may not be feasible (there may be no frame - a list of the survey population - to sample from, there may be no telephones to call to, the respondents may not speak the same language) in the actual situation. The exploration and testing phase is therefore important to ensure that major elements of the plan will work before a great deal of effort is put into final design details. Note that even at this stage, the specific questionnaire design need not have (and some would say should not have) begun.

3.4 Revision of Plan

This stage takes into account and modifies the parts of the plan which are inadequate or unsatisfactory. Revisions may have major ramifications extending back to, and requiring modifications to be made to, the statement of objectives as well as to parts of the survey plan. Inadequacy of an essential part of the survey plan, discovered only during the full-scale survey, may jeopardize the usefulness of the results.

3.5 Specific Concepts and Operational Definitions

Once we are satisfied that the draft plan is workable, the topics to be covered can be reviewed against the objectives to specify their exact meaning.

Specific concepts and working definitions should be developed and applied to all possible types of survey situations to ensure their relevance and clarity. For example, even such a simple item as "income" should be defined as "salary", "total family income", etc., as appropriate. Questions can then be developed which will ask for the exact information required, e.g.: "total family income before deductions in 1979". As the specific questions, working definitions and concepts become more fully developed, the objectives, content, hypotheses, etc., often become subject to further refinement. This is an iterative (or circular) process, as various drafts of a questionnaire are usually required before a final version is produced.

4. TYPES OF QUESTIONS IN SURVEY RESEARCH

We have seen that an essential first step of questionnaire design is a well-defined statement of what information is required. Nonetheless, the researcher is often left with considerable freedom and creative responsibility in how to ask questions. The tools available to him/her, to aid in question wording, include a classification of questions into recognizable types. Consider, for example, the hypothesis that Canadians today consider "National Unity" a rather unimportant political issue. What, specifically, does this imply? Each of the following is a possible operationalization of this hypothesis. Each is inspired by a different question type:

When asked to freely generate all the current political issues which they consider important, few respondents would mention National Unity;

More respondents would answer "No" rather than "Yes" when asked if they consider National Unity an important political issue;

When asked to choose the most important political issue facing Canada today from a given list, few respondents would choose "National Unity";

When asked to check off, from a given list, all the political issues which they consider important, few respondents would check off "National Unity";

When asked to rank a given set of political issues in order of importance, respondents would not rank "National Unity" very highly;

When asked to rate the importance of "National Unity" on a scale from 1 to 10, respondents would not rate its importance very highly.

In the sections to follow, the questions types will be identified which have shaped the hypothesis of "unimportance" in the several ways identified above.

A question typology also defines the options for the format and analysis of data. For, once a particular type of question is selected, the statistical analyses available for consideration are immediately determined. Illustrations to support this point will be presented throughout.

In summary, then, identification of question types lends structure to questionnaire design in two ways:

it classifies the various methods of verbalizing requests for information; and

it classifies the numerous modes of data analysis one can call upon.

The first and perhaps most obvious distinction to be made in the classification hierarchy is that of the "open-ended" versus "closed-ended" questions, which the following section discusses.

4.1 Open-Ended vs. Closed-Ended Questions

The distinction between the open-ended and closed-ended question concerns the degree of freedom accorded the respondent in choosing his answer. An open-ended question allows him to generate a response on his own, and in his own words; a closed-ended question restricts him to choosing among alternatives specified in the questionnaire.

Here is an example of a question whose content can be adapted to either type:

Example 4.1

Open-ended:

What types of music do you most like to listen to?

Closed-ended:

Here is a list of different types of music. Please indicate which types you most like to listen to:

- | | |
|-----|--|
| () | Jazz |
| () | Popular |
| () | Folk |
| () | Classical |
| () | Country and Western |
| () | Rock |
| () | Blues |
| () | Other (specify) |
| () | None. I don't like to listen to any type of music. |

There has been also identified, in the literature on survey methodology, a question type called the "partially closed-ended" question, used in interview situations. To the respondent the question sounds open. He is simply asked, for example, what types of music he most likes to listen to. But the interviewer has a pre-coded sheet for his responses. As he talks, the interviewer matches the types he mentions against a list. The purpose of this question type is mainly the gain in efficiency by having responses coded as they are given. To obtain this efficiency, the researcher needs to predict the likely range of responses to the question - not always a straightforward task.

Consider for example the possible reactions to the following question (adapted from Warwick and Lininger, 1975, p. 135):

Example 4.2

How much does your job as an administrator challenge you - in the sense of demanding your skills and abilities?

When approached informally with this question, administrators in an office may give a variety of responses, ranging from an adverb description of how much they were challenged ("slightly"), to an indication of the percentage of skills and abilities exercised ("about 40%"), to a reply combining frequency and amount ("sometimes demands a lot, other times very little"). Such evident discrepancies in interpretation of the question or in the mode of measurement which the respondent uses to indicate "amount", are often described as differences in frame of reference. That is, respondents may think along different lines in devising what they consider to be appropriate responses.

The problem in this, relevant to the present discussion, is that the questionnaire designer himself may assume a particular frame of reference and construct a "partially closed-ended question" accordingly. Thus, he may list, for the interviewer's sake, the following options to the question above:

- () Completely demands my abilities
- () Demands most of them
- () Demands about half
- () Demands some of them
- () Demands very few of them

But as our informal pre-test illustrated, an interviewer is unlikely to find a respondent who spontaneously utters one of these options; indeed the sample responses given above demonstrated that a respondent need not even think along the same implicit "scale". Thus, there is no gain in efficiency, and a good deal of potential frustration on the part of the interviewer, in having this list of response options to refer to. The conclusion one draws is that, without change in wording, this question is inappropriate for a partially closed-ended format.

As indicated in the last paragraph, the partially closed-ended question has been defined for the interviewer's sake. What has not been explored, but appears to hold potential for further research, is the notion of partial closure from the respondent's point of view. Researchers typically emphasize how much opportunity for "freedom of expression" an open-ended question gives the respondent. But consider the following open-ender: "On what days of the week is your garbage collected?" Although no list of alternatives is read to the respondent, it is reasonable to argue that he generates, mentally, a pre-coded checklist consisting of the seven days of the week. In this way, he "partially closes" the question. Indeed, one may argue more extremely that, with such obvious response alternatives as days of the week, the question is perceived as being completely closed-ended. It then becomes of interest to inquire further about the respondent's perceptions. When a question is presented to him

as open-ended, does he perceive complete freedom, some freedom, or no freedom at all in the response he is allowed to select? Indeed, under what circumstances does he select from a list of mental response alternatives, as opposed to reporting whatever response first enters his head? And how can we systematically tie the psychological difference of those two response strategies to objective characteristics of questionnaire items?

So between the two well-defined extremes of open and closed-ended questions is an ambiguous middle ground. For the researcher, there is a varying degree of confidence about whether partial closure of questions would increase efficiency. For the respondent, even open-ended questions may lean toward closed-endedness if the response options are obviously constrained and small in number (such as days of the week). Thus, the respondent has a parallel variation in the extent to which he perceives "closure" in open-ended questions. Exploring further this notion of a partially closed-ended question - from the respondent's point of view - may open new doors in understanding the role of respondent perceptions in the survey process.

For the remainder of the discussions; however, let us set aside this ambiguous middle ground, and define a question as either open or closed, according to whether or not the alternatives are explicitly presented to the respondent. The next section describes a sub-classification scheme for closed-ended questions and offers more detail on their analysis and use.

4.2 Closed-ended Questions

4.2.1 Identifying the Subtypes

The three simplest variations of closed-response questions are the "two-choice", "multiple-choice" and "check-list". These are illustrated below, in three sequential questions taken from a 1976 Statistics Canada survey on "Fitness, Physical Recreation and Sport".

Example 4.3

Two-choice question:

30. Is there any sport or physical recreation activity in which YOU DON'T PARTICIPATE that you would like to start doing regularly?

_____ YES _____ NO GO TO QUESTION 33

(Print the name of the activity) _____

Multiple-choice question:

31. In what context would you like to participate? (Check one only.)
- ☐ Non-competitively
 - ☐ Competitive non-organized
 - ☐ Competitive Organized
 - ☐ Other

Checklist question:

32. Why haven't you participated in this sport or physical recreation activity? (Check one or more).
- ☐ It's difficult to find others to participate with.
 - ☐ I am physically unable to participate.
 - ☐ Not enough time - other leisure activities.
 - ☐ Not enough time because of work (school).
 - ☐ There is no opportunity to participate near my home.
 - ☐ It costs too much to participate.
 - ☐ The available facilities/arena are of poor quality, inadequate, not challenging.
 - ☐ I don't know how to do it well enough.
 - ☐ Other reasons (Specify) _____

A further type of closed-ended question is a ranking question, in which respondents must arrange all of the given alternatives in an order corresponding to some specified criterion. Here is an example which might be used in a study of job search behaviour.

Example 4.4

Ranking question:

Below is a list of some of the ways people go about finding jobs. Please rank them in order of effectiveness by placing the number (1) beside the method you think would be most helpful, a (2) beside the method you think would be second most helpful, and so on.

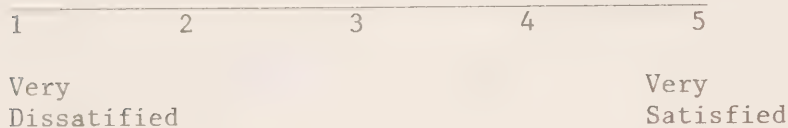
- | | |
|-------------------------------|-----|
| Mailing out resumes | () |
| Newspaper or magazine ads | () |
| Canada Manpower Centres | () |
| Checking with friends | () |
| A private placement service | () |
| Unemployment Insurance Office | () |
| Direct contact with employers | () |

The final type to be considered here is a rating scale, illustrated in the following question:

Example 4.5

Rating scale question:

"Please indicate your satisfaction with the bus service in the city by circling the appropriate number on the scale below."



Though rating scales vary in format, they share the property of representing response strength by a graded scale. Now a scale is an abstract representation. Thus, the use of one requires an assumption that the rating task is "meaningful", the respondents understand the correspondence between the line on the page and some real-life variable.

A creative version of a rating scale was introduced by Lawrence Leduc (1977), who was obviously attempting to ensure that the rating task would be meaningful to respondents. He asked them to indicate their personal feeling of warmth towards their province and country by referring to temperatures on a thermometer:

Example 4.6

"You will see here a drawing of a thermometer. It is called a feeling thermometer because it helps us measure people's feelings toward various things. Here is how it works. If you don't have any particular feelings toward the things we are asking about, place them at the 50° mark. If your feelings are very warm toward a particular thing, give a score between 50 and 100 - the warmer your feelings, the higher the score. On the other hand, if your feelings are relatively cool toward something, place it between 0 and 50. The cooler your feelings the closer the score will be to zero."

Another visual rating scale technique involves a card which looks like this:

Example 4.7

YES

yes

no

NO

The respondent is asked to answer in terms of a "big yes", a "little yes", a "little no", or a "big no" (Payne, 1951).

4.2.2 Two-Choice and Multiple-Choice Questions

When a decision among two or more clear-cut alternatives is called for, it is obviously an occasion for a two-choice or multiple-choice question. The typical hypothesis under investigation predicts that one alternative will be favoured over the rest, or that the percentage of "votes" for the various alternatives will match a certain pattern. Frequency counts are thus the principal index of data analysis for both two-choice and multiple-choice questions. The chi-square statistic is available for determining the significance of frequency differences. It may also be used to test whether the proportion of votes for all alternatives is in line with a researcher's prior expectations.

The validity of the data from two-choice and multiple-choice questions rests on a particular assumption - that the alternatives or choices offered in the question be mutually exclusive and exhaustive. A respondent must be identified with one and only one alternative. Data from the following question, for example, could not be meaningfully analysed:

Example 4.8

"In which of the following categories is your age in years?"

- () 20-30
- () 30-40
- () 40-50
- () more than 50

The categories are neither mutually exclusive nor exhaustive. The list of categories could easily be resolved as follows:

- () less than 20
- () 20-29
- () 30-39
- () 40-49
- () 50 or more

Sometimes, for multiple-choice question, collapsed frequency counts are employed. A respondent may be asked to indicate whether he is "very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied" with his local postal service. Later, the data could be collapsed over the first two and last two response categories, to reflect percentages of "positive" versus "negative" attitudes toward postal service.

If the data are going to be collapsed anyway, the reader may ask, why not ask a two-choice question in the first place? Shouldn't one use the simplest question formatting that will test the hypothesis of interest?

The simplicity principle is advisable in general. But exceptions to this principle are sometimes recommended on the basis of professional intuitions and research in psychology, which suggest that people like to perceive freedom and opportunity for self-expression when they answer questions. Having only two alternatives sometimes makes them feel "hemmed in". They often prefer to indicate more details than a two-response question would allow. Thus, a certain artistic judgement must be exercised in determining which question type to use.

The last paragraphs talked about why a two-alternative issue might be expanded into a multiple-choice format. Sometimes, there is a need for an opposite strategy: taking a multiple-choice issue and reducing it to a series of two-choice questions, a procedure which can be illustrated with the following multiple-choice question:

Example 4.9

"There has been a lot of discussion lately about the future of Quebec in Canada. Which of the following constitutional options do you prefer for the future of Quebec?"

- a. Quebec to become completely independent, both politically and economically. ☐
- b. Quebec to become politically independent but have an economic association with the rest of Canada. ☐
- c. Quebec to remain a province of Canada. ☐

There are three options here which the researcher wants considered. But in fact, he is not tied to a multiple-choice format, for the question above can be easily broken into two two-choice questions as follows:

Example 4.10

1. "Which of the following constitutional options do you prefer for the future of Quebec?"
 - a. Political independence for Quebec. (Go to Question 2). ☐

- b. Quebec to remain a province of Canada
(Skip to Question 3). ☐

2. You indicated that you prefer political independence for Quebec. Which of the following arrangements would you prefer to see?

- a. Quebec to become completely independent,
economically as well as politically. ☐
- b. Quebec to become politically independent,
but have an economic association with the
rest of Canada. ☐

Again, then, we see that the researcher has an option about which question type to use, in order to gather data on the same issue. Clearly, breaking a multiple-choice question down into a series of two-way choices simplifies a complex decision. It helps the respondent to focus on details of the alternatives.

But two cautions are in order regarding the disadvantages of breaking down multiple-choice questions in this way. The first concerns the increased length of the questionnaire. The second is rather more subtle, and concerns the researcher's assumptions in how he breaks down a multiple-choice question. He must test his assumptions and determine how a respondent would break down the decision in his own mind. Otherwise, there will be distortions in the data. This claim can be illustrated with an example, as presented next.

Consider a record distributor hoping to predict July sales. He may ask 100 customers the following question and obtain the data indicated in brackets. "Which of the following record collections would you most prefer?"

Example 4.11

- a. The complete set of Beethoven symphonies,
played by the Toronto Symphony Orchestra. (25%)
- b. The complete set of Beethoven symphonies,
played by the Winnipeg Symphony Orchestra. (25%)
- c. The complete set of Mozart symphonies
played by the Winnipeg Symphony Orchestra. (50%)

On the basis of the data above, the distributor might order quantities in the proportion 25; 25; 50.

Suppose he designs his questions otherwise, breaking them into two two-choice questions as follows:

Example 4.12

1. "Which of the following do you prefer, Beethoven symphonies or Mozart symphonies?

() Beethoven (Go to Question 2)	(50)
() Mozart (Skip to Question 3)	(50%)

2. Suppose you could listen to Beethoven symphonies played by either the Toronto Symphony Orchestra or the Winnipeg Symphony Orchestra. Which would you prefer?

() Toronto (50% of respondents who receive the question, or 25% of total sample)
() Winnipeg (50% of respondents who receive the question, or 25% of total sample)

On the basis of the data above, the distributor would again order quantities in the proportion 25; 25; 50 for Beethoven/TSO, Beethoven/WSO, Mozart/WSO respectively.

Note that in breaking down the question, the distributor has assumed that the respondent would use the following logic in making his decision: "Which composer do I prefer? If Beethoven, which orchestra would I rather hear playing Beethoven?" In breaking down the original multiple-choice question, the distributor has predicted the respondent's logic, simplified the questionnaire and obtained the same data.

But what if the distributor breaks down the original multiple-choice question as shown below? The data indicated beside each alternative are completely plausible, and perhaps expected, given the pattern of responses hypothesized earlier.

Example 4.13

1. Which do you prefer, the Winnipeg Symphony Orchestra or the Toronto Symphony Orchestra?

() Winnipeg (Go to Question 2)	(50%)
() Toronto (Skip to Question 3)	(50%)

2. Suppose you could listen to the Winnipeg Symphony Orchestra play Beethoven symphonies or Mozart symphonies. Which would you prefer?

() Beethoven (50% of respondents who receive the question; or 25% of sample)
() Mozart (50% of respondents who receive the question; or 25% of sample)

Note now that on the basis of the data above, the distributor's order would be in different proportions, namely 50; 25; 25 for Beethoven/TSO, Beethoven/WSO, Mozart/WSO respectively.

What has happened? Why do the results predict different sales? The distributor once again has simplified the questionnaire by predicting the respondent's logic, but he has predicted differently. He has assumed the respondent would break down his decision in this way: "Which orchestra do I prefer to listen to? And if Winnipeg, which composer?" The source of the different prediction is the assumption the respondents consider the orchestra-factor ahead of the composer-factor.

In the context of this example, the danger seems minimal: it is "obvious" that composers are more central to a music-listener's preference for records than are orchestras. But in other circumstances, the hierarchy of importance of various factors may not be so obvious.

The main point to be made is this: simplifying a multiple-choice question into a set of two-way choices involves assumptions about the respondent's decision-logic. If these assumptions are incorrect, the data may be a distortion of the "true" pattern of opinions. (The reader may recognize the similarity of this problem to a controversy surrounding Luce's "Axiom of Choice", as discussed in Debreu (1960).)

This section, then, has demonstrated that the distinction between a two-choice and multiple-choice format is not a trivial one, based only on the number of alternatives relevant to the issue under study. There is a good deal of professional judgment which needs to be exercised in obtaining, simultaneously, the desired degree of simplicity, the respondent's cooperation, and valid data.

4.2.3 The Checklist Question

As illustrated above, a checklist question is appropriate when there is more than one alternative which may be "correct" for a given respondent. He is invited to indicate all the alternatives which apply to him.

In asking whether a checklist format, as opposed to another format, is appropriate for his purposes, a researcher should be guided by the question on which he is seeking more statistical information. Since checklist data can be statistically analysed in several ways, there are quite a variety of research questions which the checklist can be used to address. Below are listed some of the indices which may be compiled from checklist data, and the research questions to which each index can be applied. Appropriate statistical tests are also named.

Independent frequency counts for each alternative:
How often is Alternative X chosen? Is it chosen by a majority of the population? Are there differences among subgroups of the population (for example, men versus women)? A chi-square statistic may be applied to the latter question, to investigate whether any observed differences are statistically significant.

Within-list comparisons: How much more frequent is the choice of Alternative X than of Alternative Y? Cochran's test (e.g., Hays, 1963) is appropriate here for statistical analysis.

Within-list correlations: "When respondents choose Alternative X, how likely are they to also choose Alternative Y? Or, more generally, how often is the set of alternatives (X, Y, ... Z) chosen as a package?

Package size: What percentage of respondents check one only? What is the most frequent number of items chosen? (Such questions may be relevant, say, for tracking a publication distribution program, where one or more publications will be mailed to a respondent on request). Statistical comparisons of average package sizes for various subpopulations could be done using a nonparametric analysis of variance.

Most statistical analyses of checklist data require that certain assumptions be met:

that the alternatives are distinct. Otherwise, a respondent may use two categories to reflect the same response, and that response will be "double-counted";

that the alternatives are independent. The checking-off of one alternative should have no effect on whether or not some other alternative is chosen. (This assumption may be the basis for a statistical test of "within-list correlations", described earlier.);

that all respondents perceive the same constraints in the number of allowable alternatives. (For example, in ordering free publications, some respondents may check off everything they want, while others stop at three because they think it would be unreasonable to expect more.) The meeting of this assumption is impossible to guarantee, but appropriate question wording can help.

4.2.4 Ranking Format

The ranking format generates a more interesting discussion, for not only are there several ways to analyse ranking data, but, as we shall see, different ways may give different indications of the favourability towards the alternatives. Thus, in analysing ranking data, it is particularly important to be precise concerning what research question the analysis is intended to answer. Below are listed two possible indices for analysis.

Frequency counts of favoured alternative: For what percentage of people is Alternative X the favourite? How does Alternative X compare with others in this respect?

Favourability judged by taking all rankings into account: What is the average rank that Alternative X obtained? How does Alternative X compare with others in this respect?

To see how these two methods of analysis might yield conflicting indications of favourability, consider the following voting procedure:

Example 4.14

Four candidates, Alice, Barbara, Charlotte and Dawn, are running for President of the High School student body. The voters are asked to rank order the candidates in order of preference.

Alice and Dawn are the two strongest candidates, but they hold radically opposing views. Thus students who endorse Alice would strongly object to Dawn, and vice versa. Barbara and Charlotte are not really presidential material, but nice people whom no one objects to.

In light of this situation, the following voting "data" may be considered plausible.

RANKS

	No. of "1"s <u>obtained</u>	No. of "2"s <u>obtained</u>	No. of "3"s <u>obtained</u>	No. of "4"s <u>obtained</u>	<u>Average Rank</u>
Alice	225	0	0	175	2.3
Barbara	0	400	0	0	2.0
Charlotte	0	0	400	0	3.0
Dawn	175	0	0	225	2.7

By the usual majority vote method, Alice would be President. But by the method of averaging ranks, Barbara would be President. In fact, this is an analogue of a true life story, a presidential vote in the author's own high school (several years ago). Because the administration chose to average ranks, a candidate whom no-one wanted for president but to whom no-one had intense objections (as Barbara in our example) became president.

This illustration points up a consideration which needs to be taken into account whenever ranking data are to be used as input to decision-making or policy formation. The identification of the "people's choice" whether it be among candidates, potential product-lines, or constitutional options for the country's future, depends on how the data are analysed.

A particular word of caution needs to be added regarding the averaging of ranks. This manipulation of the data relies on an assumption, an assumption which must be true to ensure valid interpretation of the data. The assumption is that the ranks are on an "interval scale", i.e. that the interval between rank 1 and 2 is perceived to be the same distance as the interval between rank 2 and 3, 3 and 4 and so on. Only this equivalence of distance between ranks makes valid the arithmetic manipulations involved in averaging.

Here are some sample reactions on the part of the respondent which should alert the researcher that the assumption does not hold: "Well, I've managed to rank the first five, although they're all pretty good. But this sixth one is inferior by far to any of the others." (Distance between rank 5 and 6 is greater than between other ranks.) "After indicating my first three choices in order, I can't really rank the fourth, fifth and sixth - I wouldn't want any of them." (This is a reaction often obtained in the author's experience. Ranks 4 to 6 are not meaningful to the respondent. Or, at best, distances among ranks 4 to 6 would be smaller than among ranks 1 to 3.) "My first choice is a toss-up between A and B. OK, I'll put A first B second." (Distance between A and B obviously minimal, yet in averaging ranks, it would be treated as equivalent to distance between B and the alternative ranked third.)

When there is doubt about whether the equal-distance assumption would hold in a given context, three courses of action are possible:

Stick to frequency counts only. Perform no adding or multiplying operations on the numerical ranks.

Explicitly mention in the instructions that respondent should assign ranks so that the distance between ranks is equal everywhere. Have him note when this cannot be done, and omit those cases in analysis of data.

Change to rating scale format if feasible. Details for analysing data with a rating format are given in the next section.

4.2.5 Rating Scales

In a question involving a rating scale, a respondent is explicitly asked to represent his opinion with a numerical value. The numerical values so obtained act as direct input to a statistical analysis, an "analysis of variance" for example. An analysis of variance would determine whether there are differences in the mean ratings among pre-selected subsets of the respondent population.

The assumptions necessary for valid rating-scale data are chiefly assumptions about the respondent: He must understand the rather abstract task of representing his opinion by a mark on a line; he must treat the scale in the way intended by the researcher, perceiving psychologically

equal intervals where physically equal intervals appear on the page. Finally, most of the more sophisticated statistical tests allowed by rating scales include the assumption that the numerical responses will be normally distributed.

This completes the review of indicators which can be obtained and hypotheses which can be tested by means of different question types. Clearly, it is such indicators and hypotheses which should be identified first in a survey plan, and which should guide the selection of the types of questions suited to the purpose.

4.3 Repeating Question Types to Build Attitude Scales

In this section, it is intended to show that the typology presented earlier provides one with all the raw material necessary to demystify the building of attitude scales. Five well-known attitude scaling techniques will be shown to be nothing more than a composition of questions selected from each of the five types described above.

4.3.1 Thurstone Scale: A Composition of Two-Choice Questions

In a Thurstone scaling procedure, a subject is presented with a list of statements, each of which he is asked to either endorse or reject. Thus, a Thurstone scale is simply a collection of two-choice questions. An example follows, part of an attitude scale consisting of statements about war (adapted from Thurstone, 1932).

Example 4.15

Instructions: For each of the following statements, please indicate with a checkmark whether you agree with it or disagree with it.

	<u>Agree</u>	<u>Disagree</u>
1. War is a futile struggle resulting in self-destruction.	<input type="checkbox"/>	<input type="checkbox"/>
2. We want no more war if it can be avoided without dishonour.	<input type="checkbox"/>	<input type="checkbox"/>
3. War is sometimes necessary because right is more important than peace.	<input type="checkbox"/>	<input type="checkbox"/>
4. War is glorious.	<input type="checkbox"/>	<input type="checkbox"/>

As shown in the example above, statements are selected to represent several different "positions" on the issue in question. The statements vary according to how strongly they speak for or against the issue. Thus, a statement such as "War is glorious" reflects a position which favours war, and favours it strongly, while a statement such as "War is a futile struggle resulting in self-destruction" would probably be endorsed only by someone strongly opposed to war.

Where do statements originate which constitute such a scale? The procedures outlined originally by Thurstone and Chave (1929) advised the collection of a hundred or more statements on the topic in question. Statements could be gathered from anywhere: radio, newspaper, political speeches, etc. Criteria were specified by Thurstone and Chave for editing the pool of statements into a reasonably-sized package of "good" items.

The authors were quite explicit in their criteria for a good item. Each statement, they said, should be clear, brief and straightforward. It should be relevant to a respondent's overall attitude to the issue in question. It should be unambiguous. And finally, as a package, the statements should represent the whole range of opinions possible about the attitude variable. The package of statements was called an attitude scale.

Statistical techniques were specified by Thurstone and Chave to assess the relevance and ambiguity of items, as well as to translate responses into an attitudinal score. The "output" of a Thurstone scaling procedure is a numerical score for each respondent, representing the relative strength of his attitude for or against the issue in question. This score has no meaning by itself; it gains meaning when compared with scores of other individuals. Average scores of subgroups in a population can be compared: In the example above, we might expect to find a difference between those who have fought in a war and those who have not.

The details of how one translates responses into scores can be found in Oppenheim (1966). Areas of application of Thurstone scaling have included attitudes toward ethnic and cultural groups (MacCrone, 1937; Hinckley, 1932; Eysenck and Crown, 1949), social institutions (Remmers, 1943), war (Dudycha, 1943; Ferguson, 1935), political candidates (Beyle, 1932), and religion (Granneberg, 1955).

4.3.2 Likert Scale: A Composition of Multiple-Choice Questions

Like a Thurstone scale, a Likert scale is a collection of statements. The respondent considers each statement and reports how closely it reflects his own opinion.

The chief difference between Thurstone and Likert procedures lies in the number of response alternatives for each statement. For Thustone scaling, there are two; for Likert scaling there are at least five. The respondent indicates not only whether he agrees or disagress, but how much he agrees or disagrees. An example follows, a Likert scale based on statements about the glorification of sports (adapted from Jones' (1972) study of athletes).

Example 4.16

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It's not how you play the game, it's whether you win or lose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
An athlete is a gen- tlemen who represents his school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Champions come in all sizes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Winning isn't every- thing, it's the only thing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

"Agreement" is not the only response dimension one can use. For suitable issues, degrees of "approval" may be used. Degrees of frequency are another possibility.

As with Thurstone's procedures, the construction of a Likert scale begins with a collection of a large number of relevant statements from any source. Editing takes place next, according to criteria which are much the same as Thurstone's. Items should be concise, straightforward and unambiguous. They should all be relevant to a single attitudinal variable. And again, statistical techniques exist to assess the relevance and ambiguity of items, so that unuseful items may be omitted.

The output of a Likert scale is a numerical score, compiled from all the statements. The score has its use only in a relative sense, when compared to scores of other individuals in a population. The reader may consult Likert (1932) for the original outline of the procedures, with more recent summaries being found in Oppenheim (1971) Boyd, Westfall and Stasch (1977) and Scott (1968).

4.3.3 Guttman Scale: A Special Case of the Checklist Question

A Guttman scale is a checklist question with special properties. Each of the items represents an increasingly strong expression of a single attitude. The most well-known example of a Guttman scale was used in an attempt to measure peoples' attitudes toward racial groups, as shown below.

Example 4.17

Into which of the following relationships would you be willing to accept a member of the _____ ethnic group?

- ☐ Close kinship by marriage
- ☐ Personal chums in the same club
- ☐ Neighbours on the same street
- ☐ Employment in same occupation
- ☐ Citizenship in the country
- ☐ Visitor to country
- ☐ None of the above. Exclude members of that group from the country.

The aspect of interest is clearly in the respondent's cutoff level. Because the items are ordered according to a decrease along a variable, we would expect a respondent to check all items below his/her cutoff level.

Such an ideal list of items is not always possible, and there are statistical techniques to assess whether the scale is close enough to ideal to be considered useful. A respondent's answers to Guttman type questions result in a single score assigned to that respondent. The score will essentially reflect the so-called "cutoff-point" referred to earlier. Again the score is meaningful only in a comparative sense.

The researcher may consult Guttman (1950) for the complete theory and scaling procedures which characterize the technique, and will find selected applications in Podell and Perkins (1957), Wallin (1953) and Clark and Kreidt (1948).

4.3.4 Conjoint Measurement: A Composition of Ranking Questions

Conjoint measurement is an attitude scaling technique whose potential is even yet being explored. The technique relies on the respondent's ability to rank-order a set of alternatives, and from this rank ordering attempts to assign quite precise measures of "value" to each alternative. Let us begin with an example.

Example 4.18

Suppose you were in the market for a house, and the three houses described below were available. Based on these very brief descriptions, please indicate which house you would prefer most, second most and third most. Answer by putting a "1" beneath the description of your most preferred house, a "2" beneath the house preferred second most, and so on.

<u>House A</u>	<u>House B</u>	<u>House C</u>
Room sizes: generally large	Room sizes: generally small	Room sizes: generally large
Number of rooms: 7	Number of rooms: 9	Number of rooms: 9
Price: \$60,000	Price: \$70,000	Price: \$85,000
Location: City Suburbs	Location: Downtown	Location: Outside City limits
Your rank ()	Your rank ()	Your rank ()

After respondents make several such choices in which the "levels" of several factors (room size, price, etc.) are varied, a statistical analysis is undertaken with the following outputs:

the relative importance of the different factors (room size, price, etc.) in respondents' overall choices;

the relative value of individual levels of each factor (for example, how much large rooms are "worth" in comparison to small rooms);

an overall numerical value for each possible choice (House A, B, C), reflecting its favourability relative to the others

The evident advantage of the conjoint measurement technique is that it simulates lifelike situations in which consumers consider benefits in combination with each other - often having to give up some of one benefit in order to get more of another.

Detailed analytic procedures for conjoint measurement are set out in Green and Rao (1971) and Johnson (1974).

4.3.5 The Semantic Differential: A Composition of Rating Questions

The semantic differential method of scaling attitudes involves presenting the respondent with a concept (e.g., the name of the attitudinal object) followed by rating scales along many dimensions. Each rating scale is "anchored" by a bipolar adjective, such as cool and hot, mild and strong, and so on. The following example should clarify the nature of the task:

Example 4.19

<u>QDW Cigarettes</u>		Rating						
	1	2	3	4	5	6	7	
Cool	___	___	___	___	___	___	___	Hot
Thick	___	___	___	___	___	___	___	Thin
Mild	___	___	___	___	___	___	___	Strong
Masculine	___	___	___	___	___	___	___	Feminine
Savory	___	___	___	___	___	___	___	Tasteless
Unusual	___	___	___	___	___	___	___	Usual

The output of a semantic differential task is not one score for each respondent, but several. First, there is a score out of 7 for him along each dimension. But statistical analysis of his several ratings result in a more compact set of scores, a set of scores which isolates the most important variables among all the ratings. This "compacting" of data is done by means of a factor analysis.

Semantic differentials are valuable when a respondent's attitude is expected to be too "complex" for measuring on a single dimension, and when comparisons among several objects are desired. By choosing bipolar adjectives judiciously, one can obtain insights into how specific feelings and perceptions contribute to the overall emotional appeal of a given object.

This completes the review of selected attitude measurement techniques. They have been reviewed in a way which emphasizes their construction rather than their underlying theory. The interested reader will find dozens of books which do describe the underlying theory. But, hopefully, the practitioner has been convinced in this section of the mechanical straightforwardness in construction of basic attitude scales. He can begin to exploit the many years of theory and development which make attitude scales accessible and useful for practical research.

4.4 Open-Ended Questions

This section follows much the organization of the section on closed-ended questions. It begins with discussions of sub-classifications and types of analyses. In fact, though, these discussions serve to highlight the difficulties of any sub-classifications or analyses, and thus point to obvious disadvantages of open-enders.

4.4.1 The Difficulty of Sub-Classification

Payne (1951) made some attempt to delineate the variations of open-response questions which could be asked. There are, for example, lead-in questions ("How do you feel about the present bus service?"), requests for suggestions ("What could the company do to build better relations with the public?"), taps of knowledge or memory ("What have you seen or read about the new metric measurement system?") and probes ("Are there any other things you can remember? What things?"). But it is not obvious whether his classification scheme is complete, nor has it seemed to prove useful to students of questionnaire design since.

4.2.2 The Difficulty of Analysis

How to analyse, statistically, the responses to open-ended questions is another topic which defies reduction to a set of systematic principles. Some form of "content analysis" may be performed, in which the respondent's communication is subjected to codification and codified data to standard statistical analyses. That is, we have evolved techniques which permit the application of the scientific method to the fuzzy area of social communication.

But it is precisely these laudable attempts at rigorous analysis which highlight the limitations of the open response question. Let us look at the coding and analysis procedures, and consider what compromises are made, what assumptions necessary for certain analyses are overlooked, in the determined application of statistical methods to open-ended responses.

The objective of coding procedures for open-ended questions is to devise a set of response categories which "capture" most respondent answers. After devising such categories, the researcher can take each respondent's answers and re-record them in a closed-ended format.

How then does the researcher devise a set of response categories for a given question? He may begin by reading a randomly selected subset of all returned questionnaires, and listing all responses given to a particular question. Through trial and error, he groups responses under categories, choosing category names which suit the intended meanings of a group of responses.

Once responses are categorized, they can be submitted to standard statistical analyses used for closed-ended questions. It is at this point, in treating open-ended data as though they came from a closed-ended question, that major statistical assumptions are made. Principal among these is the assumption that all respondents have answered the same implicit closed-ended question; they have all, presumably, had mental access to the categories devised post hoc by the researcher.

Another assumption, for many of the statistical manipulations typically carried out, is that each respondent's answer is equal in weight to each other's. We assume that we are sampling comparable amounts of their minds or their attitudes. But the assumption is simply not warranted,

if only for our very strong intuitions that reticent people are not necessarily less detailed in their internal beliefs, or that garrulous people often say superfluous things that they have not at all thought out. Obtaining an open-ended response is very much like a sampling exercise. And variations in people's verbosity implies that we have unequal-sized samples, an indeterminate proportion of each respondent's population of thoughts.

A specific illustration of the potential bias inherent in the equal weighting of respondent's answers is given in Boyd, Westa and Stasch (1977, p. 234). The authors claim that it is the upper-income, better educated segment of the population who, being more articulate, are likely to generate more points in answering open questions. This group, for example, might mention three reasons for liking "X" soap on the average, while the average for others might be one. Then, if 100 people from the articulate group and 100 others are interviewed, 400 reasons for using "X" soap will be recorded. But three out of every four of the reasons will have been given by the articulate group. If the two groups differ in attitude, then a statistical summary containing "number of mentions" for each of the various recorded reasons will be biased.

The interviewer, too, can encourage a similar bias in the data: in conducting an interview, he may vary markedly from other interviewers in his willingness to probe for more information.

To overcome the problems of unequal length answers, the data analyst may select only the first point, say, made by each respondent. This is tantamount to the rather questionable assumption that the respondent's first point is the one he considers most important, the one he would select if he were answering a multiple-choice question. A similar argument applies even if the respondent's first two or three points are included for analysis.

Put another way, we have no way of controlling the selectivity of the respondent's information. Are the points he mentions, as he talks away, the points which are really most important to him, or the points which come to mind most easily? Are they ideas from a newspaper which he has just put aside for this survey interview, or are they entrenched values?

Finally, the problem of "information selectivity" may be generated by the interviewer too. In the onerous task of recording answers verbatim he may highlight those points he believes to be more interesting or relevant.

These are all factors which tug uncomfortably at the rigorous treatment of data which content analysis promises. Simply put, it is hard to tell whether the demands on time and energy entailed by open response questions are worth it. Certainly, though, the last word cannot be said until researchers reach the limits of their ongoing efforts to improve the quality and meaningfulness of such data, through improvements in methodology, interviewer training, and through more in-depth analysis of human communication.

4.4.3 Advantages of Open-Ended Questions

Why, in the light of all that has been said above, does the practical world maintain open-ended questions? There are certainly identifiable advantages to open-ended questions, characteristics tied perhaps to their qualitative rather than quantitative use.

In a focus group interview, or other preliminary exploratory study, they are useful in generating hypotheses, in giving the researcher a more objective view (than his own) of how to phrase hypotheses with maximum efficiency. He can then systematically produce structured items on a subsequent questionnaire which will yield answers directly tied to his hypotheses. Moreover, contributions from many individuals help the researcher determine a reasonable range of responses for a structured multiple choice item. In summary, open-ended questions are at least as useful as other descriptive sources of information which are tapped in the preparatory stages of questionnaire design.

But they may play a role, too, in the "real" questionnaire. They are advisable when it is expected that some respondents may have no information or no opinion about an issue in question: structured items might induce a response which reflects falsely on the respondent's knowledge or attitude. Side comments and explanations which respondents make often assist in interpreting data. And, too, there is the mere aesthetic value of open-response data as a source of "quotable quotes", lending colour and authenticity to a final report.

On the point of their artistic value, it is possible to add one more argument, less well-formulated, but no less important. The point is principally relevant to the interview situation. Open response questions imitate the everyday process of human communication; consequently they may be used with all the subtle tact, the insightful probing, the control of tension that we use when we cajole, negotiate or share thoughts in real life. They may be used to warm-up a respondent at the beginning of an interview, to introduce him to the topic, to put him at ease. They give the respondent an opportunity for self expression and "verbal catharsis", which act as incentives for his continued participation. After a staccato series of closed-ended questions, an open-ender may lend a pleasant change of pace. It may smooth out the frustration of being forced to choose between two unsatisfactory alternatives without an explanation. (Even some courts now allow minor traffic violators to plead "guilty, with an explanation".) Open-ended question may help to gently bridge a gap between two different topic areas in a questionnaire.

In short, an interview is a delicate communication between two human beings, and open-ended questions may be artfully used to make that communication as supportive and effective as possible.

4.5 Summary

A question typology is clearly subsidiary to the mainstream directions of survey research. But it facilitates such research, by highlighting current capabilities of questionnaires. Like a toolbox, a question typology

makes a researcher aware of what he can build, and may suggest creative ideas. For example, the introduction of conjoint measurement, it is often acknowledged, allowed researchers to explore new kinds of hypotheses; it proposed a new style of questioning which permitted a more sophisticated analysis of consumer preferences.

The typology heirarchy is dominated by the distinction between closed-ended and open-ended questions. Most published discussions are organized around a comparison of advantages and disadvantages of these two main types. The present discussion has reluctantly referred to the commonly acknowledged "advantages" and "disadvantages" but has attempted to establish a quite different focus. The intended focus has been on the use of the data, and on the different uses to which each question type is more appropriately suited. That is, the disadvantages of open-ended questions imply that they are simply less appropriate in some circumstances. For different circumstances, they are ideally suited to a particular use.

Putting a question typology into a context of research objectives and data use does much it seems, to reinforce the proper role of methodology: the role of a support mechanism for the collection of valid and reliable and usable information on any substantive topic.

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5. WORDING

There are a number of considerations that should be kept in mind when developing the wording of questionnaires. These considerations will help development of a good questionnaire according to such criteria as the ease of comprehension of the questions by both respondents and interviewers, the precision of meaning of questions, the flow of thought through the questionnaire, the ease of data processing and the meaningfulness of results.

Following is a selection of suggestions for consideration when developing the wording of a questionnaire. Each must be examined from the point of view of the survey subject matter, the survey objectives and the uses that will be made of the results. Some of these approaches will seem appropriate by intuition, others will draw their support for use from empirical evidence.

5.1 Statement of Alternative Answers

The respondent's train of thought is led by the choices offered in a question. If a question contains a selection of answers from which the respondent is to choose, it is best to present all possible answers and leave no alternative implied. If for example only one of two possible answers is presented, respondents are more likely to agree with the answer present than to formulate the alternative in their minds and to choose objectively between the two. The following example presents two wordings of a question and the corresponding results when asked of two matched groups. Note that the first example presents only one possibility and leaves the alternative, that companies could avoid layoffs, to the respondent to formulate.

Example 5.1

Question:

- (1) Do you think most manufacturing companies that lay off workers during slack periods could arrange things to avoid layoffs and give steady work right through the year?

Results:

63% said companies could avoid layoffs;
22% said they couldn't; and
15% had no opinion.

The question was then reworded to state the implied alternative that layoffs are unavoidable.

Question:

- (1) Do you think most manufacturing companies that lay off workers in slack periods could avoid layoffs and provide steady work right through the year, or do you think layoffs are unavoidable?

Results:

35% said companies could avoid layoffs;
41% said layoffs are unavoidable; and
24% expressed no choice.

About two thirds of respondents agreed with the idea presented in the first question. However, when the alternative was explicitly presented, the proportion agreeing with the initial idea was considerably lower.

The problem of motivating the respondent to formulate alternatives is magnified when there is more than one alternative to be considered. The following example illustrates the distribution of responses to two questions, the first one with limited alternatives presented in the question and the second one with all alternatives presented. The two questions were asked of the same group at two points in time. Note that the complex nature of the question presenting all alternatives required a visual aid. The responses were listed on a card which was handed to the respondent when the question was asked.

Example 5.2

Question:

Suppose they do set up a plan to provide workers with unemployment and health benefits through royalty payments. Who should manage the fund: the companies, the government or the union?

Results:

Government	33%	
Union	18%	
Company	18%	
Company and Union	7%	} 15%
Company and Government	1%	
Union and Government	1%	
All three	6%	
No Opinion	16%	

Question:

Which of these should manage the fund?
(present card)

Government
Union
Companies
Companies and Unions
Companies and Government
Unions and Government
Government, Unions and Companies

Results:

Government	18%	
Union	4%	
Companies	13%	
Companies and Unions	18%	} 52%
Companies and Government	8%	
Unions and Government	5%	
Government, Unions and Companies	21%	
No Opinion	13%	

When the possibility of combinations wasn't offered, only 15% went beyond the question's limited choice and volunteered combinations. Later, when all the combinations were explicit and presented visually, about one half of the respondents chose from among the combinations. It is possible that the shift reflects changes in opinion that occurred from one survey to the next. However, the researcher (S. Payne) felt 'it seems more likely that the difference in results arises from the explicit mention of the combinations in the second survey ...'. Payne refers to this as the 'pie à la mode' problem. If you offer guests pie or ice cream, few will ask for both.

Response categories for multiple-choice questions should:

- (a) list all possibilities (including a non-response or not-applicable category where appropriate); and,
- (b) not overlap (i.e., they should be mutually exclusive).

Where all possible answers are not known ahead of time, or cannot all be listed because there are far too many, a grab-bag "other" category should be included. Often this is: "Other (please specify)" with enough room for the specific answers to be written in. There might be an important category not dealt with, that can be detected from analysis of the "other" answers.

Often, a pre-test of the questionnaire can be useful, to determine the appropriateness of answer categories as perceived by respondents, as well as to see if there is any pattern of answers in the "other" category that deserve listing as a separate category (either because they are mentioned at least as much as a category already listed, or because there might be too many or too high a proportion of answers ending up in the "other" category).

Here are some illustrations of the kinds of problems that can occur if the categories are not mutually exclusive and exhaustive.

Example 5.3

What is your age?	20-30	<input type="checkbox"/>
(Check appropriate	30-40	<input type="checkbox"/>
box)	40-50	<input type="checkbox"/>
	50 and over	<input type="checkbox"/>

In which category are the responses of those who say they're exactly 30 years old to be recorded? With two categories including '30', responses will be allocated in some unknown way according to the whim of each interviewer or respondent. How about a respondent who is under 20 or refuses to give his age? There is no place to record these answers. One solution is to provide for all the categories, and to avoid overlapping, by offering categories such as: under 20, 20-29, 30-39, 40-49, 50 and over, not stated, not known and refused.

There are instances where the categories presented are mutually exclusive in the literal sense yet, due to varied interpretations of the terms used in everyday experiences, the categories appear to overlap. In the following example, disposition of waste via decontamination in the scientific sense may describe a process which is completely different from the process of disposition of waste via neutralization. Yet, in the working world, some companies may use the two terms interchangeably and they would be confused when asked to make a choice between the two in a questionnaire.

Example 5.4

In what manner is a chemical discharged by your plant presently treated or disposed of? (Check one or more)

sewer	()
landfill	()
tailings	()
decontamination	()
neutralization	()
ion exchange	()
carbon absorption	()
storage	()
other (please specify)	() _____

It is, therefore, important to ensure that the maximum number of respondents understands each category so that there is no overlapping and ambiguity that could lead to overlapping. A pretest in which respondents are asked directly whether the items presented do overlap would be a useful means of resolving this problem.

5.2 Order Bias

When respondents are asked to choose among a number of alternatives, a pattern of answers may emerge that is the result of the order in which the ideas were presented, as well as reactions to the ideas themselves.

Consider the following example (Payne, page 84). Several ideas, among which were ideas A, B, C, and D, were presented in different orders, to matching samples of respondents. In each case, the ideas A, B, C, D, were selected more often when they were at extremes in the lists than when they appeared near the centres.

Example 5.5

Idea A was selected by:

27% when it appeared at the top of the list;
17% when it appeared near the centre; and
23% when it appeared at the bottom of the list.

Idea B was selected by:

11% when at the top;
7% when near the centre; and
7% when at the bottom.

Idea C was selected by:

24% when at the top;
20% when near the centre; and
21% when at the bottom.

Idea D was selected by:

23% when at the top;
16% when near the centre; and
18% when at the bottom.

This sort of situation is quite common. Some respondents will hang onto the first idea of a series, when it becomes just too much to remember them all. Others tend to remember the last one, since nothing else comes along to displace it from their attention. The ideas in the middle tend to lose out, either way.

One solution to the problem is to present the ideas in all possible combinations, to as many randomly picked groups of respondents as there are orders of the ideas. This will help balance out some of the bias due to ordering. Of course, this can cause practical problems, such as requiring more than one version of the questionnaire, with consequent control problems in the fieldwork. It can also mean far more alternative versions - with three ideas, there are six possible combinations; with four ideas, there are 24, and so on. However, with some compromising and careful ordering, a practical smaller number can usually be found. Here is an example of how one question with six choices and a possible 720 orderings, was handled (Payne, page 85).

Example 5.6

In which of these industries would you say there is the greatest competition among companies?

Card A	Card B	Card C
Automobile	Steel	Oil
Oil	Automobile	Steel
Railroad	Coal	Chemical
Steel	Oil	Automobile
Coal	Chemical	Railroad
Chemical	Railroad	Coal

In this selection, each industry appears once at an extreme end of the list (either first or last), once in the middle (3rd or 4th), and once in 2nd or 5th position. As well, no two industries appear together twice.

5.3 Other Biases

There are a number of other sources of bias which will affect survey results. One of these sources of bias is the tendency of respondents to lean towards favourable and socially acceptable answers and towards answers that are most favourable to their self-esteem.

If there is an agree-disagree scale, with an equal number of intervals on each side, the average of all answers will tend to be toward the 'agree' side of the mid-point. If open-ended liking and disliking questions are asked, as a rule-of-thumb about twice as many liking responses as disliking will usually be offered by respondents. This is a very pervasive pattern that becomes apparent once results of a small number of surveys have been analyzed. Oppenheim has described this as an 'acquiescence bias' ("... a general tendency towards assent rather than dissent..."). Even in circumstances where respondents might be expected to be strongly opposed to something or someone, there still emerges a leaning towards the favourable end of the scale, serving to soften the strength of negative attitudes expressed.

To some extent, the effect can be decreased in a scale question by careful selection of scale wordings, but it can never be eliminated. For example, a scale should always include positive and negative statements, although there are no firm rules based on empirical evidence suggesting just what words, how large the apparent intervals should be in the scale, whether there needs to be an equal number of positive and negative statements, or whether an apparently neutral mid-point is needed. Some scales such as Likert's 5-point scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree), appear to work satisfactorily, and have the sanction of extensive use. The literature on scales and their development is immense, and it is not our intention in this handbook to cover the topic thoroughly. Some references for further reading are given at the end of this section.

Given the tendency towards positive bias in attitudinal responses, results should not be accepted as showing an "absolute" level of agreement, but be interpreted relatively, e.g., in comparisons between age or sex or region classes or with results from another survey, as showing greater or lesser agreement.

As mentioned earlier, respondents will tend to choose an answer that is most favourable to their self-esteem. They will also tend to choose answers that they think make them look intelligent or thoughtful to an interviewer. As well, answers that they think the interviewer would like them to give or that they think are in accord with social norms, may be offered. A further factor leading to the bias is a desire to be polite to an interviewer, who is most often a stranger. In being polite, respondents will hesitate to say unkind things. In self-enumeration surveys the effect of this bias may mean a greater non-response among respondents who feel that their true answers might not be socially acceptable. The effect can be reduced although never entirely eliminated, by minimizing the desirability of one response over any other.

Here is an example of a question which may entail "social desirability".

Example 5.7

Did you vote in the last election?

Some respondents may think "it's my duty as a good citizen to vote in elections - or at least I think that's the social norm - so I had better indicate to the interviewer that I agree with, and follow, the norm".

An alternate wording would be:

Were you able to get to the polls to vote in the last election?

This wording implies as an acceptable answer that not everyone did make it to the polls, and maybe the respondent didn't either. Since it is best to leave no alternative implied, this wording could be further improved by making the position explicit.

Many people did not have a chance to get to the polls to vote in the last election. Were you able to get there?

One of the easiest traps the survey designer can fall into (often unconsciously) is that of using leading or loaded words. These words may suggest an answer to the respondent which he thinks the designer wants or may make it easier or more desirable to answer in one particular way. Leading or loaded questions can result from the use of emotionally charged wording, the use of stereotyping, reference to the status quo, incomplete presentation of alternatives, reference to items which touch matters of prestige and pride, and personalization of questions.

Here are some rather extreme and even ludicrous examples.

Example 5.8

- (a) Does small business need a government wet nurse in all its daily activities? ("No" response - 97%) (Payne, page 180).
- (b) Do you think that Michigan should enact Gestapo-type laws that would reward citizens for spying on and reporting on other citizens for such offenses as air or water pollution?
- (c) Should Canada ignore the principles of the Bible, which is the law of God and morality, and legalize murder by abortion?
- (d) How do you generally spend your free time - watching television, or what?
- (e) How many times have you damaged your body by taking LSD?
- (f) Do you have respect for the New Metro council members - such as Fred Billings?

Sometimes the lead can be subtle. Here are two wordings, both using very strong active words to describe a government control. See how the results were influenced by the wordings: (Payne, page 57)

Example 5.9

Do you think the United States should allow public speeches against democracy?

Results:

Should allow	21%
Should not allow	62%
No opinion	17%

Do you think the U.S. should forbid public speeches against democracy?

Results:

Should not forbid	39%
Should forbid	46%
No opinion	15%

Apparently, while 62% would not allow public speeches in response to the first question, respondents bristled at the idea of anybody forbidding them to do something, so that only 46% would forbid them in response to the second question.

Here is another example of how a subtle change of wording in presenting a concept may lead to a different conclusion: (Payne, page 65)

Example 5.10

Would you favor adding a law to the Constitution to prevent any President of the United States from serving a third term?

Would you favor changing the Constitution to prevent any President of the United States from serving a third term?

Results:

	<u>Adding a law</u>	<u>Changing the Constitution</u>
Yes	36%	26%
No	50%	65%
No opinion	14%	9%

The analysts who worked on these results hypothesized that to many respondents the United States Constitution is regarded as something not to be tampered with. About 1/3 would accept adding a law but only 1/4 would agree to "changing" the Constitution, yet both alternatives were designed to describe the same process.

5.4 Choice of Words

The language of a question should be simple. Words used should be familiar to and appropriate for the survey population. The kind of simple vigorous language generally used by newspapers could be worth aiming for. It is important to choose these words carefully since simple words can be vague or ambiguous. A trade-off may be required between accuracy and length.

Here are some examples which violate this principle by their lack of accuracy.

Example 5.11

What is your income?

Does "your" refer to the respondent personally, or to his family or household? What time-period should he think of - last week? last month? the last 12 months before interviewing? last calendar year? last fiscal year? What is to be included in "income" besides salary or wages - tips? piece-work pay? income from other sources, such as family allowances, bank interest, the sale of a car or a house?

Example 5.12

How much sugar do you usually consume?

Should the respondent answer in ounces? pounds? kilograms? for what time-period? If he "usually" consumes lots one week, little the next, what should he answer for "usually"? Selection of a reference period for "usually" if not specified, will probably vary from respondent to respondent, and the analyst won't know what it is.

Example 5.13

What proportion of your production is sold to customers: A? B? C?

What time-period should the respondent think of, in extracting or compiling production totals from company accounts or records? "Production" should be clearly defined, as the research may or may not want to include, for example, production that is spoilt, otherwise not suitable for sale, or that may be given away in sales promotion work. Ambiguities may arise from the word "sold", and in references to "customers". Companies may use varying accounting definitions as to what constitutes a purchase. Is a shipment out of the company's premises a "sale"? What about returns for credit - are they taken into account in measuring "sales"?

Example 5.14(1)

(Respondent is shown a bottle of orange-drink.)

How much orange juice do you think it contains?

Results:

one orange and little water and sugar
25% orange and 75% carbonated water
juice of one-half dozen oranges
3 ounces of orange juice
full-strength
a quarter cup of orange juice
none
not much
a small amount of orange juice
one-fourth orange juice
very little, if any, orange juice
doubt it
don't know
not very much
3 to 4 ounces of orange juice
a pint
most of it
a little water mixed with orange juice
about a glass and a half

(1) This example is taken from U.S. v. 88 cases (Bireley's Orange Beverage), Civil Action No. 47LL (1945) (U.S. D.C. N.J.).

Better ways to word this question might have been:

"This bottle holds sixteen ounces of a drink. How many ounces of that would you say is orange juice?"

"What percentage of this drink would you say is orange juice?"

"What part of this drink - a quarter, a half, three-quarters, or what - would you say is orange juice?"

Nevertheless, attempts to be clear and specific may sometimes go too far. Needless elaboration should be avoided. Judgement is needed as to whether elaboration is excessive. Probably, nobody would deny that this example is excessive.

Example 5.15

How well do you get along with the women you married and regularly live with - that is, your wife?

If, in the attempt to be specific, an example is given, it is desirable to give more than one and to make them as neutral as possible. The following example of a question containing a single illustration will probably not be very effective.

Example 5.16

Do you have respect for national political figures - such as Pierre Trudeau?

Respondents' opinions of Mr. Trudeau would tend to colour their answers. Rather than thinking of "national political figures" in a general sense, the tendency may be to think just of Mr. Trudeau.

Often, it is necessary to use technical or legal terms. When this occurs, definitions or explanations are recommended and care must be used to avoid any patronizing, condescending or official sounding tones. Consider the following question to be used in a survey of the general population in a medium-sized town.

Example 5.17

Are you aware of the impending amalgamation of surrounding constituencies into the 'New Metro' area?

It is likely that many respondents will not understand terms like 'impending amalgamation' and 'constituencies' and that rigorous explanations or alternate wording will be necessary. Explanations of terms such as these can be easily and tactfully presented. Difficulties generally arise from the elaboration about simpler or more common terms. The next example deals with a common process that directly affects most people. (Payne, page 116)

Example 5.18

How do you feel about your income tax, that is, the amount you have to pay the government on the money you take in?

Since paying income tax is such a common experience, some may be offended by the inclusion of a definition. One way to avoid such a reaction is to give the explanation before the term itself.

How do you feel about the money you have to pay to the government on the money you take in during the year, that is, your income tax?

Providing the explanation of the term first forces the respondent to consider the idea or concept in the fashion dictated by the researcher, and presents the definition as if it were a new discovery. The net effect seems to be an 'un-offended' respondent.

A similar approach seems to hold for the ordering of ideas in a question. The respondent should be forced to consider conditions by placing the conditions at the beginning of the question. Placing the key idea first could lead respondents to consider only the idea and respond immediately without listening to or thinking about the remainder of the question. The following example presents two orderings of a single question. The first ordering could lead the respondent to answer immediately without considering the hypothetical constraint 'if you were forced to leave now'.

Example 5.19

In what area would you look for another house/apartment, if you were forced to leave the one you are in now?

If you were forced to leave the house/apartment you are in now, in what area would you look for another?

It is better to put the key idea last, with any explanations or conditions preceding it.

As well as ensuring that the ideas in a question are clearly presented and defined, the researcher must ensure that the terms and or definitions will mean the same thing to all respondents. Without a common understanding of a concept, results cannot be aggregated. It is like adding together apples and oranges.

Many surveys include a few questions on respondent characteristics. This information is usually requested to classify respondents into groups for analysis. The best approach for such questions is, of course, to use simple direct wording. There is, however, another consideration to be made and that is the use of standard classifications and concepts.

Why bother to standardize? In longitudinal studies standard classifications and concepts make it easy for the respondent to collate information quickly, since he follows the same procedure each time. For one time or short term studies, standardization allows the data to be compared with other studies which used the same standards and concepts,

and again, it allows the respondent to produce the information easily. Finally, standardized definitions and concepts allow for wider use of the collected data in 'secondary' analysis.

Statistics Canada has frequently been asked for advice on wording of questions on respondent characteristics. The Standards Division (Statistics Canada) has, therefore, produced a "Social Concepts Directory for Statistical Surveys".

The directory suggests a number of standard wordings for asking age, family composition or makeup and size, on through to more complex topics such as education and occupation. A copy of the Directory can be obtained by writing to the Federal Statistical Activities Secretariat, Statistics Canada, Ottawa, Ontario, K1A 0T6, or the Standards Division, Statistics Canada, Ottawa. It can also be obtained through the local Regional Advisor of Statistics Canada in St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Regina, Edmonton or Vancouver.

5.5 Built-In Assumptions

It is desirable to make sure that a question is applicable to all respondents who encounter it. Difficulties can be avoided by proper lead-in questions which include whether the respondent is qualified to answer it. For example, the question "How old is your wife?" should be preceded by questions that determine: (a) that the respondent is a male of marriageable age, and, (b) that he admits to having a wife.

Questions should not assume that the respondent has knowledge or awareness in very specific areas. Such questions could embarrass or even annoy some respondents while others will claim knowledge they don't have, so as not to look foolish.

Example 5.20

Do you generally approve or disapprove of the policies of the military government of Peru?

Do you think that incineration at 1600 degrees Celsius for 30 minutes is an adequate way of disposal of polychlorinated biphenyls?

A common assumption among designers of business survey questions is that the respondent can readily give answers that may in fact require a considerable amount of work to complete. Questions on production, sales or amounts or values of raw materials, may refer to different time periods, different levels of detail, or different geographical boundaries, from the records kept by the company. Some prior discussion with officials of respondent companies might prevent this problem from arising. Alternatively, this is a problem that could be studied in a questionnaire pretest. Although it is best to adhere to a recognized set of standard concepts, it may be necessary to accept reference-periods, areas, disaggregations, etc., that apply to the largest number of potential respondents, or to the largest or most important respondents, the ones the survey designer least wants to irritate or most wants to get accurate answers from.

5.6 Double-Barrelled Questions

In developing a questionnaire it is essential to avoid those questions which have two or more questions 'nested' within them. These are generally referred to as double-barrelled questions. Problems arise for both the respondent and the researcher when dealing with such questions. Respondents become confused in trying to understand and answer the question especially when they have different answers for each part.

Researchers have difficulties interpreting the responses to such questions since it is not clear to which sub-questions responses apply. The following is an example of a double-barrelled question with some possible responses.

Example 5.21

Do you plan to leave your job and look for another one in the coming year?

Possible responses:

- (i) Yes I plan to leave my job and no I don't plan to look for another;
- (ii) Yes I plan to leave my job and yes I plan to look for another;
- (iii) No I don't plan to leave my job and yes I plan to look for another;
- (iv) No I don't plan to leave my job and no I don't plan to look for another.

If the researcher thought this question through and provided all of the possible responses as categories for the respondent to choose from, this double-barrelled question would not pose a problem for either the respondent or the analyst. However, if only two check boxes labelled 'yes' and 'no' were provided, and this is the usual case with such questions, how can the respondent who 'plans to leave his job and not look for another' indicate his response? If he checks both 'yes' and 'no', what is the researcher to infer? Is the intended response option (i) or option (iii)?

One indicator of the likelihood of a 'double-barrelled' question is the appearance of the conjunction 'and' or 'or' in the question. The best way to avoid confusion is to replace single questions containing 'and's' or 'or's' with two or more simpler questions.

5.7 Hypothetical Questions

In general, it is better to avoid hypothetical questions such as "what would you do if" or "would you like to do this" when asking respondents about their expected behaviour in particular situations. Answers to these kinds of questions have been shown to be poor predictors of actual behaviour.

In a 1958 survey by the United States National Bureau of Economic Research, respondents were asked, "Which of the following products do you plan to buy within six months?" When interviewed six months later, the proportion of those planning to buy who had actually purchased ranged

from a low of 20.2% (for air conditioners) to a high of 57.7% (for automobiles). For most items, the proportions were in the 20%-40% range. Even when asked "which ... do you definitely plan to buy over the next 12 months or so?", a follow-up interview 12 months later of those who had indicated a definite plan to buy yielded proportions ranging from 40.0% (for garbage disposal units) to 75.5% (for automobiles) with almost all other proportions, for 11 other items, in the 40%-60% range. (Source: Juster, F.T., "Anticipations and Purchases", NBER paper number 79, 1964, Table 2, pages 22-26.)

In general, it seems safer where possible to make predictions on the basis of projections from past behaviour.

In some circumstances, however, hypothetical-situation questions may have some validity. For example, a hypothetical question may be appropriate if the situation is quite simple, or if the situation is very similar to one the respondent has been in at some time. Hypothetical questions can, with care, be used in third-party descriptions. For example, a description is given of a situation with accompanying circumstances, happening to some one else and the respondent is asked for advice on what the other person should do. The kind of hypothetical questions to be avoided are the complex ones the respondent has likely never considered and would have no idea of all the details that should be considered to make informed choices. Answers are likely to be shallow and ill-thought-out, and far from what the respondent really would do. Also, respondents may suffer from a degree of "social-desirability" bias.

If there seems to be no alternative to asking a hypothetical question, it seems best to offer a wide choice of alternatives, rather than ask the open-ended "what would you do?" For example, "what would you do if you lost your job tomorrow?" might be better expressed with a list of several choices of courses of action. A further question along the lines of "is there anything you definitely would not do?" might help to make the pattern of choices clearer.

5.8 Ease of Reading Questions in Personal or Telephone Interviews

It is generally preferable to give interviewers the complete questionnaire with the exact wording to be used. If the questions aren't complete, interviewers will improvise their own wording. Control over consistency of wording will be lost and this may lead to answers that cannot be compared. Interviewers should be encouraged to read questions exactly as worded, every time. Some of the following additions to the questionnaire may help make it easier for interviewers, especially from the point of view of approximating a conversational intonation.

Spell out abbreviations unless they are very common ones all respondents are likely to understand, or ones that have already been well defined earlier in the interview. This will help prevent the interviewer stumbling or pausing at having to make small decisions. "RCMP" would probably be acceptable, while "PCB" would probably mean something only to

chemical engineers. "BNA Act" would be understood by only a small proportion of the general public (and an even smaller proportion could be expected to know much about it).

Underscore critical words to ensure uniform emphasis by interviewers, and uniform interpretation by respondents.

Example 5.22

Now we'd like to talk about last week. Did you ...?

This will help emphasize a change in time reference.

Be careful in using commas, colons and dashes. They might cause a break in the interviewer's verbal flow and may prematurely lead the respondent to assume that the question is finished and thus start to answer.

Pretest the questionnaire to see if the wording is accepted and understood in a consistent manner by interviewers and respondents.

5.9 References

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6. SEQUENCING

6.1 General Concerns of Sequencing

Once the researcher has translated his objectives into specific questions, he must now be concerned with the ordering of these questions into a logical sequence, a concern which, if ignored, may have negative effects on the quality of data resulting from the survey. A logically structured questionnaire will be beneficial to the satisfaction of survey objectives by improving both the quality and quantity of response, not only to specific questions but also to the entire questionnaire itself. Overall, question sequence must satisfy the respondent, the interviewer (when applicable), and the researcher.

With respect to the respondent, the sequence should be designed initially to provide and later to maintain motivation to respond to the questionnaire. Even for well motivated respondents, interest may diminish if the questionnaire skips from topic to topic irrationally, if many questions seem irrelevant, or if the interviewer gets lost in a complicated, unclear questioning sequence. Questionnaire sequence should also overcome any suspicions or doubts that the respondent may have concerning the legitimacy of the survey. The use of basic principles of good sequencing may even facilitate the respondent's recall of specific items. In addition, good sequence may aid in the completion of self-enumerated questionnaires through the use of adequate and easy-to-follow instructions.

For the interviewer's benefit, questions should flow in a clear and orderly manner to ease in the administration of the questionnaire. Precise instructions should be included on how to move ahead, how and when to skip certain questions, and so on.

Since the researcher's prime concern should be to obtain data of high quality, the ordering of questions should not lead to any bias in the data. For example, questions regarding the awareness of a concept should precede any other mention of that concept. The researcher also should try to avoid conditioning respondents in the early questioning to a frame of reference which could bias responses to later questions. In addition, non-response bias will likely be diminished if the order is such that specific questions are unlikely to be missed.

6.2 Some Specific Aspects of Sequencing

6.2.1 Instructions and Requests for Cooperation

In most surveys, a potential respondent is under no compulsion to respond to a particular questionnaire. Even where response to a survey is obligatory, the legal requirement to respond is rarely enforced and may not even be known by the respondent.

Consequently, it is extremely important that the respondent's interest be aroused to motivate him to think carefully about or research the answers to the set of questions asked so that high quality data are better assured. Thus, the purpose of the survey and a request for cooperation should be included with the first information provided to a potential respondent, either orally by an interviewer (based on instructions contained in an interviewer's manual) or written in an introductory letter to the respondent included with the questionnaire or sent in advance of the questionnaire.

Depending on the subject matter of the survey as well as the respondent's own concerns, assurances of confidentiality of the information provided (if such assurances can in fact be made) should be contained in the opening remarks to the respondent. Confidentiality assurance is especially important when the survey contains questions that an individual perceives as personal or requests for information which a business establishment would not want a competitor to obtain. The researcher is indeed trying to "sell" the survey to the respondent, confidentiality being part of the sales pitch.

For those surveys completed by the respondents themselves, instructions for return procedures and, where applicable a return address should be provided, not only in an introductory letter but also on the questionnaire itself. The inclusion of the return address on the questionnaire is recommended since introductory letters can easily be mislaid or separated from the main body of the questionnaire. The deadline by which respondents are to return completed questionnaires may also be included along with general instructions on how to complete a questionnaire and definitions of key concepts.

Examples of questionnaires with their instructions and request for cooperation are shown in section 7.

6.2.2 Identifying Information

Some survey identification will be required on a questionnaire. The following identifiers all serve to establish specific information about a survey for reference purposes for the respondent or the interviewer: the title of the survey; the name of the survey sponsor; the name, address and/or telephone number of the interviewer or another representative of the sponsor to be contacted if there are problems or questions about completion of the questionnaire. These items should be placed in a location separate from the survey questions themselves to avoid confusion.

Each questionnaire in a particular survey should normally have provision for its unique identification to facilitate survey administration. Control numbers may be needed for purposes of non-response control (for follow-up purposes) or for estimation procedures based on the sample design. Interviewer identification and place, date and time of the interview may be used for quality control procedures on interviewers (verification that the interview has actually taken place, reinterview of a respondent, or a check on the quality of an interviewer's work). The name, address and

telephone number of the respondent and/or the business establishment may serve to aid in obtaining further information, in clarifying information already obtained or in monitoring non-respondents for follow-up procedures. Colour coding of questionnaires may be used to easily distinguish questionnaires going to different segments of the sample, such as large businesses and small businesses or questionnaires completed in French and in English.

Examples of survey identifiers from the 1976 Work Experience Survey managed by the Special Surveys Coordination Division, Statistics Canada and the Survey of Enrolment in School Board Adult Education Courses sponsored by the Vocational and Continuing Education Section of the Education, Science and Culture Division, Statistics Canada follow. In these and most other cases, such identifiers are placed at the beginning of the questionnaire before the main subject matter of the survey.


Example 6.1

1976 Work Experience Survey (Special Surveys Coordination Division, Statistics Canada)

WORK EXPERIENCE SURVEY 1976														
R.O.		DOCKET NO.				PAGE LINE		P.S.U.			GROUP		CLUSTER	
1	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>	2	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>	3	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>	4	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>	5	<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>	6	<div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>			

Example 6.2

Enrolment in School Board Adult Education Courses (Vocational and Continuing Education Section, Education, Science and Culture Division, Statistics Canada)

 <div style="display: inline-block; vertical-align: middle;"> Statistics Canada Statistique Canada </div>	
Education, Science and Culture Division Vocational - Continuing Education Section	
ENROLMENT IN SCHOOL BOARD ADULT EDUCATION COURSES JULY 1, 197__ to JUNE 30, 197__	
<small>Authority Statistics Act, Chapter 15, Statutes of Canada 1970-71-72</small>	
Name of school board and province	Date
Address	Telephone
Director of adult/continuing education	Reporting officer

Please return
by
June 1

6.2.3 The Opening Questions

Any initial motivation resulting from the introductory statements on the purpose of the survey must be sustained by the opening questions of the questionnaire. Thus, the first question must be sufficiently interesting to motivate the respondent not only to answer them but also to continue with the remaining questions. Above all, the questions should be related to the subject matter introduced in the purpose, described earlier to the respondent. Respondents may be under no obligation to answer the questions posed and even those who are obligated may not provide accurate, well considered responses. Relevant, interesting questions at the outset may be the catalyst necessary to inspire the respondent and put him in a position to provide responses more willingly because of a real interest in the research problem and its effective implementation. On the other hand, seemingly irrelevant questions may cause the respondent to wonder whether the real purpose of the survey is to sell something.

Opening questions should also be much like the opening problems on a high school examination: they should be sufficiently easy to give the respondent confidence to proceed further. Difficult or especially threatening questions in the early stages may be enough to cause non-response in the case of an initially apprehensive or unwilling respondent. Generally, the opening questions should put the respondent at ease.

Thus, the 1976 Work Experience Survey began by asking questions about the respondent's work experience in the last year, concerning whether the work was full-time or part-time, the number of days per week and hours per day usually worked and so on. The 1975 Survey of Selected Leisure Activities, managed by the Special Surveys Coordination Division, Statistics Canada for the Secretary of State Department, started with questions on participation in eleven selected but fairly common leisure activities. The National Survey of Driving Habits, sponsored by the Road and Traffic Safety Branch of Transport Canada opened with questions to obtain information on the licence held by respondents, the number of miles driven in the previous twelve months and driver education courses taken. In all these examples, the opening questions were related to the subject matter of the survey, were sufficiently easy to answer and generally interesting enough to most respondents.

A technique used on occasion in surveys involving an interviewer is to begin in a conversational manner and thus build a rapport with the respondent by getting him immediately and directly involved in the task at hand. An example from Warwick and Lininger (1975) illustrates this with the use of an open-ended question.

Example 6.3: Warwick and Lininger, page 149

"Let's talk about schools. What would you say are the main differences between schools nowadays compared to what they were like when you went to school?"

In some surveys, the opening questions may serve to establish that the respondent is a member of the survey population. For example, in Transport Canada's National Survey of Driving Habits, at the initial contact with a responsible adult in the household, a list was made of all those persons living permanently in the household who had a licence to drive a motor vehicle. After the random selection of a respondent, the opening question addressed to that respondent confirmed whether he had a valid licence to drive a motor vehicle.

The opening questions also serve as a learning process, educating the respondent on his expected role concerning the topics raised, the detail required in answers and how to answer questions. This further emphasizes the earlier recommendation that the initial questions be easy to answer. The respondent is required not only to become attuned to the topic introduced on the questionnaire but also to learn what is required of him as a respondent. A suitable sequence of opening questions will attain these objectives.

6.2.4 The Flow of the Items

When considering the sequence of questions appearing in the main body of the questionnaire, the researcher should design the questionnaire to serve the logic of the respondent rather than applying his own logic to the flow of questions. This will establish and maintain consistent frames of reference for the respondent and assist recall. What may seem logical to the survey designer who is very familiar with the subject matter of the survey because of extensive background research, may not seem at all logical to the respondent on whom the questionnaire is suddenly thrust. Suitable question sequence will often allow respondents to anticipate their answers to the subsequent questions because such questions seem logical as a next step for discussion. A pretest of the questionnaire on typical respondents is recommended as the means for determining whether the flow of items is in fact perceived as reasonable by the respondents.

Not only should the general flow of questions appear smooth to the respondent, but within the flow, the respondent should also be able to see the relationship of the questions to the stated objectives. Questions should relate to the overall purposes. Otherwise, suspicion may arise in the same way it could have with irrelevant opening questions. Questions for which the only purpose in obtaining answers is that of being "nice to know", and which are only distantly related to the objectives, should be avoided.

A technique often used to aid the smooth flow of question topics is that of brief transitional explanations or transitional questions. These methods help to introduce new topics as well as aid respondents in moving easily from one frame of reference to another. Such transitional explanations or questions may be used to justify the inclusion of certain questions which may appear at first to be irrelevant or too personal. They thus serve to orient the respondent to the immediate objectives of a set of questions.

The 1976 Work Experience Survey serves as a good example of a questionnaire with transitional explanations that help provide a smooth flow to the questions. Section A, consisting of a series of twenty-seven questions, begins with "I'd like to begin by asking you some questions about your work experience in the past year," while Section B open with "Now I'd like to ask you some questions on your feelings about work". The respondent is reoriented to a new topic. Without the explanation, the change may appear to be too abrupt to the respondent, a situation which may lead to confusion and disorientation.

Warwick and Lininger refer to "chronological lead-ins" which can be valuable memory aids for questions on such topics as migration, job history or a respondent's perceptions of attitudes from his past. By focusing on events preceding those being pursued in the questionnaire, the respondent may be able to put himself into the proper time reference to remember specific details more easily. For example, questions on job history could be preceded by a question on the date of completion of formal schooling or the date of a move to the respondent's current residence or city.

Lists of questions with exactly the same form in a long sequence should be avoided where possible or broken up by a different type of question to avoid boredom, irritation or putting the respondent into a particular response set where he doesn't really think carefully about the particular responses and just answers in the same manner as before.

6.2.5 The Location of Sensitive Items

Questions which are likely to be considered sensitive by respondents, be they concerning topics of a personal nature or subject areas that would be valuable to a firm's competitors if they could obtain the information, should be located in a section of the questionnaire where they are most meaningful in the context of other questions. In such a location, they may not appear to be out of place and are then somewhat desensitized. Income questions are usually perceived as being somewhat sensitive by respondents and thus generally generate higher than average non-response rates. However, if such questions are put within the context of economic conditions, job history or work experience, their relevance may seem more evident to respondents who may then be more willing to provide the information. In the 1976 Work Experience Survey, questions on job satisfaction which are potentially sensitive were placed immediately after more factual questions on work (type of work done, length of time on the job, and so on).

Generally, sensitive questions should not be placed at the beginning of a questionnaire since at this time, the research is primarily concerned with making a valiant effort to get the respondent interested in even answering the questionnaire. At such a time, a sensitive question could cause the respondent to give up completion of the survey document. An argument raised for putting sensitive questions at the end of the questionnaire is that any hostility evoked by them will not influence

further questions. Most of the information will already have been obtained. An argument against putting them right at the end of the questionnaire (especially in long questionnaires) is that respondents may become tired or impatient and be more likely to refuse. The most appropriate place is within the context of other questions.

In a personal interview, sensitive items should be introduced at a point when the respondent will have developed some trust in the interviewer. The interviewer's own confidence in the study and her own capabilities will also aid in eliciting response from sensitive questions by putting the respondent at ease.

In view of the above discussion, a pretest is the best vehicle for determining first, whether any questions are perceived as being sensitive and secondly, the best location in the overall sequence for such questions.

6.2.6 Classificatory Data

Classificatory data describe the person/family/household/firm/plant/institution by various economic, social or other characteristics that relate to the subject of the research. Some examples are age, sex, marital status, position in a household, education, occupation, income and number of employees. They are usually used for classification purposes in the tabulations or analysis. In some cases, one or more characteristics may be used in ratio estimation techniques which make adjustments to survey data according to (a) particular auxiliary variable(s) which is (are) correlated to the variables of interest. For example, in the Labour Force Survey designed by the Labour Force Survey Division and the Household Surveys Development Division, Statistics Canada, age and sex are obtained for each respondent and then used with Census age-sex projections for a province to adjust survey data using ratio estimation.

Classificatory data are usually requested in the latter part of a questionnaire since they often do not directly and obviously relate to the survey objectives. In many cases, an explanation given to respondents as justification for their inclusion is that such questions are to be used for classification purposes only. These questions need not all be asked together and, in fact, it may be more reasonable to locate many in relevant sections of the questionnaire. For example, income questions could appear with questions on work experience or employment status.

Generally, only questions that are expected to be used for specific analyses should be asked. For example, a reason often given for a question on marital status is that "It's always asked". This is insufficient reason, especially since the concept of response burden is becoming more and more of a concern to survey designers and respondents.

The Social Concepts Directory for Statistical Surveys prepared by the Standards Division provides questions and suggested answer categories for many of the items frequently included in surveys for classification purposes.

6.3.2 The Funnel Strategy

Two of the major criticisms of public opinion or attitudinal research are that uninformed persons or persons who are informed but do not carefully think about the issues raised in a question or set of questions may not be distinguishable from those who carefully consider the issue and that often the reasons for opinions are ignored. George Gallup, as Director of the American Institute of Public Opinion, proposed a question sequence which tried to alleviate these criticisms (Gallup, 1947). Because the technique probed five different aspects of the respondent's thinking, it has been called the "quintamensional" approach or plan.

Basically, the quintamensional design proceeds from questions that are broad and unstructured to those that are more specific by using five categories of questions. Depending on the topic and circumstances, not all five categories may be needed while it is also possible that many questions could be asked within each category. Thus, the approach is flexible depending on the given situation.

The five categories are as follows: general awareness of the topic, uninfluenced general attitudes on the subject, specific attitudes, reasoning behind the attitudes, and intensity of feeling.

The opening category of questions serves as a filter to find out whether the respondent is aware of the topic. A single question requiring a "Yes" or "No" answer may be used here, although a "Yes" answer does not provide proof that the respondent is actually aware of the subject since some respondents may be reluctant to confess ignorance. Usually, further probing is required to determine this, probing which strives to determine just how much information the respondent does have, if any, concerning the issue. Open response questions are frequently used to determine the general awareness.

Open response questions are often employed in the second category to explore in a somewhat unstructured fashion, opinions of the respondent himself. Such questions attempt to explore the direction of his thinking.

The third category, approaching the topic more specifically, includes questions on particular proposals or opinions and employs dichotomous or multiple choice items. The researcher, by using the first two categories as a frame of reference, is in a better position to understand the specific opinions put forth by respondents in this third category.

In the fourth category, the questionnaire designer is trying to learn the reasons behind the views expressed earlier. Open-ended questions should provide this information.

The last category determines the intensity with which the opinions already expressed are held and is the most specific set of questions posed in the quintamensional design.

Example 6.5 (Kahn and Cannell, 1957) illustrates the approach using one question for each category.

Example 6.5: (from Kahn and Cannell, page 159)

- (1) How do you feel this country is getting along in its relations with other countries?
- (2) How do you think we are doing in our relations with Russia?
- (3) Do you think we ought to be dealing with Russia differently from the way we are now?
- (4) (If Yes) What should we be doing differently?
- (5) Some people say we should be tougher with Russia, and others think we are too tough as it is. How do you feel about it?

The quintamensional sequence of questions trie to ascertain the respondent's frame of reference before obtaining information on his opinion. Because it allows the respondent some freedom of expression, he need not feel cheated at not really having had a chance to have his say on an issue. The respondent is free to verbalize all salient aspects of the issue. The sequence is effective in focusing on the finer details of the respondent's perceptions through the combined use of open and closed response types, allowing freedom of expression while still enabling the researcher to obtain specific data which can be compared across respondents. Depending on the situation, the quintamensional design may even aid the respondent in recall because of its gradual focus on the area of concern.

6.3.3 The Inverted Funnel Strategy

Kahn and Cannell discuss situations where an inverted funnel sequence may be appropriate. Basically, this approach commences with specific questions and proceeds to more general questions on the respondent's level of knowledge about the issue. The respondent is forced to think through his opinion in a number of areas which make up the issue.

The technique is appropriate when the respondent is likely to have thought little or not at all on the topic or have very little information about it. In such a case, the researcher is trying to ensure that the respondent has considered certain points before answering the broad question(s) on the topic itself or that all respondents have an equal frame of reference on specific dimensions before reaching the general issue. An example from Kahn and Cannell discusses an evaluation of a work situation where the question sequence takes the respondent through very specific questions on the worker's foreman, the physical conditions of work, the content of the job and so forth. Then, the general question posed is concerned with how the respondent feels about the company as a place to work, taking all the specific details into consideration.

The inverted funnel strategy is also appropriate when the respondent may have such strong feelings about a general issue that any responses which followed such a question would be biased by them. Warwick and Lininger illustrate this with an example where the questions get information first on overall attitudes to a minority group, then on specific members of the group. The respondent's desire to remain consistent with his original judgement could affect later response. The inverted funnel technique attempts to alleviate this problem by posing the specific questions first.

6.4 References

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7. LAYOUT

Layout consists of arranging the contents of a questionnaire into an effective and attractive package. Although this section applies to all questionnaires whatever the method of data collection, it applies particularly to those questionnaires which are to be completed directly by respondents.

There is no one best layout, as the way in which the questionnaire will be used, as well as other factors, will have an influence on the design. For instance, those questionnaires which are to be completed by interviewers need not contain as complete instructions as those which are completed by respondents. They can also contain questions which are used by the interviewer to screen suitable respondents from the general public, or questions which are completed by the interviewer from observation only.

Questionnaires which are to be completed directly by respondents should be more complete in every respect. There is no interviewer available to explain the purpose of the survey or clarify any of the questions. When the prospective respondent receives the questionnaire package, it must convey the entire message and contain the answers to most reasonable question regarding the identity of the sponsor, the purpose of the survey, the confidentiality of responses given by respondents, the urgency, completion instructions, and the address to which completed questionnaires should be sent.

7.1 Layout Considerations

In planning layout, the following points should be considered:

7.1.1 Appearance

The effect which the appearance of the questionnaire has on a respondent will affect the respondent's attitude toward responding. The initial impression can influence the respondent to peruse the questionnaire. Then, once the respondent's interest has been aroused, it must be retained.

7.1.2 Ease of Entering Data

The layout should provide the easiest possible method for entering the data requested. As responding is a courtesy in most cases, it is only reasonable to make respondent burden as light as possible.

7.1.3 Ease of Using Data

The layout should facilitate using the data collected. It is both time-consuming and exhausting for processing staff to have to search for irregularly-located entry spaces.

7.1.4 Reducing Tendency to Error

The layout should help reduce any tendency to error in entering or using the data. Respondents should not have to guess in which space a particular answer should be entered, which unit of measure to use, or whether only one or several response answers are expected to a multiple-choice question, etc. Obvious errors may be detected by processing staff but making corrections adds to processing costs. When answers in irregularly-located entry spaces are keyed, there may be a tendency for some entries to be missed.

7.1.5 Size and Construction

The physical size and construction of the questionnaire should lend themselves to the conditions under which the data are entered. Questionnaires which are to be completed in an office may have large pages without being inconvenient, while diary-type questionnaires should usually be packaged as a small booklet for the convenience of respondents. Questionnaires which are to be completed by interviewers may be designed for use with a clipboard.

7.2 Design Principles

There are a number of design principles which will assist in laying out a questionnaire:

7.2.1 Simplicity and Clarity

The first impression conveyed to respondents by a questionnaire should be simplicity and clarity. Apparent complexity (or a cluttered appearance) will tend to emphasize the effort required to complete the questionnaire and may cause the respondent to delay completion, either temporarily or indefinitely. The best approach is to be businesslike and polite.

Normally, the front page should contain:

- Identification of the sponsor,
- A message identifying the purpose of the survey, possibly in the form of a short letter from a senior person in the sponsoring organization,
- General completion instructions,
- Confidentiality to be given to the data provided,
- Required date for completion,
- Instructions for return of complete questionnaire.

If space permits and the page will not appear crowded, the opening questions may also appear on this page.

The numbering of all questions serves several purposes. It assists the respondent in identifying where each new question starts and it assists the designer in controlling skip patterns where all questions may not apply to all respondents. The use of oversize numbers is often useful.

The use of solid lines (known as "rules") between questions is not always necessary, and may not be desirable in some layouts. The use of non-essential lines should be avoided because they can clutter up the questionnaire and can be confusing to some respondents. Conversely, lines may be useful in separating questions which are closely packed on a page. In general, borders should also be narrow because they are wasteful of useable space.

Some questionnaire designers use a pictorial device such as a line drawing or photograph which symbolizes the subject matter, prominently displayed on the first page. Such a device will likely attract a respondent's attention and can be prepared in such a way as to represent very little cost.

7.2.2 Instructions

All instructions which concern the completion of questions should be placed directly above the question(s) concerned, or at the front of the questionnaire.

When an instruction applies to a series of questions, some device should be used to signal when the instruction no longer applies. This device could be a bold horizontal line, another major heading, another instruction, etc.

Instructions and introductory statements should be in a type style which is distinctly different from that used in the questions, so that they stand apart from the questions.

Unless respondents are expected to answer all questions in sequence, it is useful to use arrows and/or directions to indicate alternate paths or skips in the answer pattern for different categories of respondents. These arrows and/or instructions should be in boldface type or a contrasting colour so that they stand out.

7.2.3 Simple Language

It should usually be assumed that respondents are poorly educated or that they are pre-occupied or indifferent when completing a questionnaire. Respondents often live and work in an environment that is quite different from that of the researcher and may also have a different pattern of logic, as well as having different value systems and priorities.

Questionnaires should avoid technical terms, abbreviations or acronyms unless these are known to be familiar to the respondents. A glossary of terms in the front of the questionnaire may be useful if the use of technical terms cannot be avoided.

7.2.4 Consistency of Style and Terminology

Insofar as possible, the style of layout and wording should be consistent. Changes of style of layout which are used simply for variety may be interpreted to have a significance that was not intended.

The same applies to the nouns used. Where several nouns can be used interchangeably, one of these should be selected and used throughout the questionnaire. Respondents may infer that a different meaning is intended where a synonym is used occasionally.

The association between each question and its answer space should be unmistakable, so that entries are placed in the correct space.

The layout of multiple-choice questions should be consistent within each group of questions. Where a change in pattern of layout occurs between groups of questions, this should be identified by a conspicuous instruction; otherwise, respondents may assume that the same pattern continues throughout all multiple-choice questions.

7.2.5 Logical Groupings and Sub-Titles

Most questionnaires deal with several different topics, and may also include questions on both facts and opinions. Generally, questions should be grouped in clusters and arranged in a sequence which is logical to the respondent. If the subject matter arrangement appears to be illogical, the respondent may become confused or irritated.

Each sub-division should be identified by a suitable short title, and possibly a sentence or two to introduce the new topic area and explain which aspects will be covered by the questions to follow. This directs the respondent's thinking in the desired direction.

Where questions in different topics areas deal with a previously mentioned subject, the second (and subsequent) questions on the subject should acknowledge this situation and clearly identify that the current question deals with a different aspect of the subject. This avoids the feeling that there is duplication of questions.

7.2.6 Adequate Spaces for Answers

In many cases, the amount of space provided for write-in answers will influence the length of the answer.

Where the length of a normal answer is known in advance, the designer can ensure that sufficient answer space is provided. Inadequate space may cause the answer to be abbreviated or incomplete. This problem is more prevalent where the questionnaire is prepared by an operator who is not given adequate layout instructions. This results in short questions having excess space for answers and long questions not having enough space.

7.2.7 Suitability for Processing of Data

Where the answers on a questionnaire are to be coded and captured on cards or tape, a computer systems analyst should be consulted early in the design phase.

Some questionnaires lend themselves easily to pre-coded entry spaces, while others may require a coding column down the right edge of each page, separate work sheets or some other arrangement.

Coding arrangements should not be conspicuous as they may confuse some respondents.

Questionnaires using mark-sense entries or optical character recognition should be field-tested with the particular survey population to ensure that respondents know how to complete them properly.

7.2.8 Colours of Paper and Ink

Effective use can be made of coloured paper for the printing of questionnaires, particularly in a light tint or pastel colour. Vivid or dark colours of paper should be avoided because of the reduced contrast between the paper colour and the printing which may render the printing very difficult to read under certain types of lighting. Different colours of paper can be used to identify different variations or sections of a questionnaire.

Small quantities of questionnaires are almost always printed in black ink because of the time and cost involved in changing ink colours on the press. For large press runs, the use of coloured ink becomes economically justifiable and can achieve a pleasant appearance and excellent contrast with the particular colour of paper used. Two contrasting colours of ink can be used effectively, but the cost becomes excessive for small quantities of questionnaires.

7.2.9 Bilingual Layouts

Where a questionnaire is to be produced in both languages, back-to-back or "tumble" layout or some similar separation makes the questionnaire easier to understand by all respondents. Alternate lines of English and French should be avoided in most cases.

Where the physical segregation of English and French cannot be achieved, different type styles should be used for each. Instructions should then be enclosed in boxes to avoid the use of too many type styles on the same page.

If laying out English and French in side-by-side columns, the French text should be laid out first because it usually requires 25%-30% more space.

Example 7.1

The Canada Health Survey used a combination of physical tests and a self-completed questionnaire, two pages of which are shown on pages 71 and 73. The questionnaire was dropped off and picked up by an interviewer.

1. The sponsors are clearly identified on the cover of the questionnaire.
2. The prominent title clearly identifies the subject matter.
3. The introductory paragraphs reinforce the verbal explanation which was given earlier by the interviewer. The purpose of the survey is described, cooperation is sought, and the means of ensuring confidentiality is explained.
4. The series of photographs are eye-catching and they also reinforce the title.
5. The date is specified on which the interviewer will pick up the completed questionnaire.
6. The Docket No. and Person No. are included on the cover for administrative purposes during collection and data capture.

Example 7.1



lifestyle and your health

Lifestyle has a direct influence on health. The effect may not be immediate, but everybody knows that risks taken today are paid for tomorrow, just as positive action results in better health.

The **Canada Health Survey** is collecting information on the state of health of Canadians. At the interview we collect information on people's health now and in the past but to plan effectively, we must also have indications of health in the future. That is why we ask that you fill in this questionnaire.

Your lifestyle is a private matter. To ensure your privacy, we have provided you with an envelope for your questionnaire. All the information collected will be used in combination with answers from the other participants. No individual will ever be identified from the results.

Please take a few minutes to help us plan for the future needs of all Canadians.



The interviewer will pick up this questionnaire on _____

Example 7.2

Each page (or set of two pages) of the Canada Health Survey questionnaire is devoted to one particular aspect of lifestyle and/or health. Page 6 of the questionnaire (on page 73) deals with tobacco.

1. The subject matter is clearly identified, followed by a short sentence which establishes the desired frame of reference on the part of the respondent.
2. The questions are clearly numbered and easy to follow.
3. The entry spaces provided for numeric entries are distinctly different from those provided for tick marks.
4. The alternative answer paths (Part "A" or Part "B") are clearly identified by the arrows in question 2.
5. The skip instruction in question B3 instructs the respondent to ignore page 7 of the questionnaire which deals with additional details about smoking habits.
6. The bold arrows at the bottom of the two panels clearly indicate that only one of these panels is to be completed by any one respondent.

Example 7.2

TOBACCO

These questions are about your experience with tobacco and smoking

1. Check any of the following which you now smoke daily.

☐ ⁶⁰¹ pipes

☐ ⁶⁰² cigars

☐ ⁶⁰³ cigarillos

OR ☐ ⁶⁰⁴ none of these

2. Do you smoke cigarettes daily?

☐ ⁶⁰⁵ Yes — Answer the questions in PART "A" only

☐ ⁶⁰⁶ No — Answer the questions in PART "B" only

PART "B"

PART "A"

3. At what age did you start smoking cigarettes daily?

At age ⁶⁰⁷

4. About how many cigarettes do you now smoke each day?

About ⁶⁰⁸ a day

5. How far do you usually draw in the smoke?

☐ ⁶⁰⁹ 1. Only into my mouth

☐ 2. Into my throat

☐ 3. Partly into my chest

☐ 4. Deeply into my chest

☐ 5. I'm not sure

6. Has your smoking changed over the last 12 months?

☐ ⁶¹⁰ 1. Smoking more now

☐ 2. Smoking less now

☐ ⁶¹¹ 3. Switched to a stronger brand

☐ 4. Switched to a milder brand

OR ☐ ⁶¹² 5. No change over the last 12 months

7. Have you tried stopping during the last 12 months?

☐ ⁶¹³ Yes

☐ No

8. Please check the one brand of cigarettes which you usually smoke in the list on the next page.

3. What experience with cigarettes have you had? (Check one only.)

☐ ⁶¹⁴ 1. Never smoked

☐ 2. Now smoke occasionally

☐ 3. Used to smoke occasionally

OR ☐ 4. Used to smoke daily

Go to page 8 (Alcohol)

4. At what age did you start smoking daily?

At age ⁶¹⁵

5. At what age did you stop smoking daily?

At age ⁶¹⁶

6. About how many cigarettes did you usually smoke daily?

About ⁶¹⁷ a day

7. How far did you usually draw in the smoke?

☐ ⁶¹⁸ 1. Only into my mouth

☐ 2. Into my throat

☐ 3. Partly into my chest

☐ 4. Deeply into my chest

☐ 5. I'm not sure

8. Please check the one brand of cigarettes which you used to smoke in the list on the next page

Example 7.3

The Labour Market Comparison Study was a supplementary survey to the monthly Labour Force Survey in March 1979. It was conducted by the Labour Force interviewer in a personal interview.

1. The confidentiality of the completed questionnaire is stated.
2. The control information is needed for administrative purposes during collection and data capture. These identifiers are dropped once the computer records have been "cleaned".
3. Instructions to the interviewer which are unique to this survey, are clearly set out where the interviewer will see them before completing the questions.
4. The paragraph in italics in question 10 is to be read to each respondent who falls into the specified sample.
5. The entry spaces for numeric entries are a different shape from those for tick marks.
6. The skip patterns in questions 11 to 16 are too complex for use in a self-completed questionnaire but are acceptable for use by trained interviewers.

Example 7.3



Statistics Canada Statistique Canada

LABOUR MARKET COMPARISON STUDY

CONFIDENTIAL
when completed
1 FORM NO. 06

Docket No. 2

Survey Date 3 0 3 7 9
Mo. Yr.

Assignment No. 4

HRD page-
line no.

Given name

Surname

5

6

7

INTERVIEWER INSTRUCTIONS

Step A: Transcribe identification from the FORM 03 for the first (next) HRD page-line no. 15 years of age or over. (Do not include HRD page-line nos. with Code 2 in Item 40 of the FORM 03.)

INTERVIEWER INSTRUCTIONS

Step B: Complete the FORM 03-FORM 05 Sharing Agreement below with each information source for the FORM 03 and FORM(S) 05. (Do not complete the FORM 03-FORM 05 Sharing Agreement on subsequent FORMS 06 for this household.)

10 SHARING AGREEMENT

"As I have mentioned, Statistics Canada and the Economic Council of Canada have designed this survey because they feel that the information which you have provided will be valuable in determining ways to reduce the unemployment problem in Canada. Statistics Canada would like your approval to share this information with the Economic Council of Canada although you have the right to deny this sharing. May I have your approval to share this information?"

(Enter HRD page-line no. for each information source for the FORM 03-FORMS 05.)

"Would you please sign here to indicate that I have recorded your response correctly."

HRD page-
line no.

Yes ☐

No ☐

Respondent's signature

HRD page-
line no.

Yes ☐

No ☐

Respondent's signature

HRD page-
line no.

Yes ☐

No ☐

Respondent's signature

HRD page-
line no.

Yes ☐

No ☐

Respondent's signature

"Although your answer is sufficient you may also write during the next month, to the Chief Statistician, Statistics Canada, Ottawa, to indicate that you agree or do not agree to share your information with the Economic Council of Canada. Please include the following number in any correspondence ..."

(Read this respondent's Docket no. and HRD page-line no.)

INTERVIEWER INSTRUCTIONS

Step C: Complete Items 11 to 16 referring to the FORM 05 and to the RESPONDENT SELECTION TABLE when required.

If a selected household member is NOT available for interview, arrange for a call-back.

11 INTERVIEWER CHECK ITEM: ON FORM 05

- . If "Yes" in Item 10 (worked last week).....¹ ☐ go to SELECTION TABLE
- . If selected.....² ☐ go to 45
- . If not selected...³ ☐ END

- . If "No" in Item 10 (did not work).....⁴ ☐ go to 12

- . If "Perm. unable to work" in Item 10.....⁵ ☐ END

12 INTERVIEWER CHECK ITEM: ON FORM 05

- . If codes 1, 2, 3, 4, 7 or 0 in Item 33.....¹ ☐ go to SELECTION TABLE
- . If selected.....² ☐ go to 45
- . If not selected...³ ☐ END

- . If Codes 5, 6 or blank in Item 33.....⁴ ☐ go to 13

13 INTERVIEWER CHECK ITEM: ON FORM 05

- . If blank in Item 57.....¹ ☐ go to 14
- . If ... has done nothing to find work in the past four weeks in Item 57....² ☐ go to 14
- . If ... has done something to find work in the past four weeks in Item 57....³ ☐ go to 17

14 DID ... WANT A JOB LAST WEEK?

- Yes ¹ ☐ go to 15
- No ² ☐ go to 16

15 WAS THERE ANY REASON ... COULD NOT TAKE A JOB LAST WEEK?

- ☐ Enter code and go to 24

16 INTERVIEWER CHECK ITEM: ON FORM 05

- . If "Full-time" in Item 81.....¹ ☐ go to SELECTION TABLE
- . If selected.....² ☐ go to 54
- . If not selected...³ ☐ END
- . If "Part-time" or blank in Item 81.....⁴ ☐ END

Example 7.4

The Survey of Inpatient Facilities for the Treatment of Emotionally Disturbed Children was conducted by mail. It was addressed to the administrators of the respective institutions.

1. The use of a bilingual form eliminates the need to ascertain which language is used in each institution, but the layout appears somewhat cluttered as a result.
2. The columnar arrangement of entry spaces along the right margin facilitates data capture and also is convenient for the respondent.
3. The careful use of large brackets within the questionnaire provides easily-understood breakdowns of the various categories with a minimum of textual explanation.
4. In general, the questions are more direct and business-like than on a personal questionnaire intended for completion by an individual.

Example 7.4

SURVEY OF INPATIENT FACILITIES FOR THE TREATMENT OF EMOTIONALLY DISTURBED CHILDREN
ENQUÊTE SUR LES ÉTABLISSEMENTS DE TRAITEMENT DES ENFANTS AFFECTIVEMENT PERTURBÉS
CANADA, 1974

Is the name and address label of your facility correct? Yes ☐ No ☐

Cette étiquette est-elle complète et exacte? Oui ☐ Non ☐

If "NO", please provide correct information below

Si "NON", inscrivez les renseignements exacts ci-dessous

NAME - NOM

ADDRESS - ADRESSE

POSTAL CODE POSTAL

* PLEASE SEE DEFINITIONS - * CONSULTEZ LES DÉFINITIONS

I Historical and Administrative Data - Données chronologiques et administratives

1. Please indicate type of your facility (check one only)
 Indiquez le genre d'établissement (ne cochez qu'une case)

UNIT IN A
 UNITÉ D'UN

- RESIDENTIAL TREATMENT CENTRE
 CENTRE RÉSIDENTIEL DE TRAITEMENT
- ALTERNATE LIFESTYLE RESIDENCE
 INTERNAT DE RÉADAPTATION À UNE VIE NORMALE
- GENERAL HOSPITAL
 HÔPITAL GÉNÉRAL
- CHILDREN'S HOSPITAL
 HÔPITAL PÉDIATRIQUE
- MENTAL RETARDATION CENTRE INCLUDING HOSPITAL TRAINING SCHOOLS
 CENTRE POUR ARRIÈRES MENTAUX (COMP. ÉCOLE DE FORMATION)
- PSYCHIATRIC HOSPITAL
 HÔPITAL PSYCHIATRIQUE

OTHER (specify)

AUTRE (précisez)

2. When did your facility commence operations for the treatment of emotionally disturbed children?
 Quand votre établissement a-t-il commencé à s'occuper du traitement des enfants affectivement perturbés?

MONTH	YEAR
Mois	Année

3. (a) Are you licensed to operate a facility for the treatment of emotionally disturbed children?
 Avez-vous un permis vous autorisant à exploiter un établissement de traitement des enfants affectivement perturbés?

Yes ☐ No ☐

Oui ☐ Non ☐

(b) If "YES", is your facility licensed by a municipal or a provincial government? (Check one only and name the department or ministry that was directly responsible for the licensing)
 Si "OUI", indiquez le niveau de gouvernement (ne cochez qu'une case) et donnez le nom du ministère ou service qui vous a délivré ce permis.

MUNICIPAL ☐

PROVINCIAL ☐

NAME - NOM

4. Please indicate type of ownership (check one only)
 Indiquez le genre de propriété (ne cochez qu'une case)

Ownership: (i.e. person, group of persons, agency or corporate body who is the registered owner according to the deed.

Propriété: (c.à.d. personne, groupe de personnes, organisme ou corporation qui, selon l'acte d'enregistrement, est le propriétaire en titre).

• Proprietary
 Privée à but lucratif

• Voluntary
 À but non-lucratif

Government
 Gouvernement

- INDIVIDUAL OWNERSHIP
 PROPRIÉTÉ D'UN PARTICULIER
- PARTNERSHIP
 SOCIÉTÉ EN NOM COLLECTIF
- CORPORATION
 CORPORATION
- LAY (VOLUNTARY) LAY BODY
 SOCIÉTÉ LAIQUE (BÉNÉVOLE)
- RELIGIOUS
 ORGANISME RELIGIEUX
- CORPORATION
 CORPORATION
- MUNICIPAL
 MUNICIPAL
- PROVINCIAL
 PROVINCIAL

OTHER (specify)

AUTRE (précisez)

5. (a) Is this facility a part or a member of a chain of two or more facilities?
 Cet établissement fait-il partie ou est-il membre d'une chaîne de deux établissements ou plus?

(b) If "YES", please name the parent or controlling body:
 Si "OUI", nommez l'établissement principal ou la corporation dirigeante:

NAME - NOM

ADDRESS - ADRESSE

POSTAL CODE POSTAL

Examples 7.5 and 7.6

The Travel Survey 1977 was conducted by personal drop-off and pick-up by a Labour Force interviewer.

1. The sponsor is clearly identified.
2. The title is displayed prominently.
3. A letter signed by the Chief Statistician explains the purpose of the survey, asks for cooperation and assures the respondent of confidentiality of responses given.
4. The control information is needed for administrative purposes during collection and "cleaning" of computer tapes.
5. Completion instructions are given at the bottom of the front cover. These instructions can be discussed with a member of each household when dropping off the questionnaire, and any queries answered immediately by the interviewer.
6. The questions on pages 80 and 81 may appear complex at first glance, but:
 - (a) all questions are arranged in a single column and are clearly numbered;
 - (b) each question is answered across the two pages for as many trips as apply.
7. Entry spaces provided for numeric entries are a different shape than those provided for tick marks.

Example 7.5



Statistics Canada Statistique Canada

TRAVEL SURVEY 1977

Dear Respondent,

The purpose of this survey is to provide information on the travel and transportation patterns of Canadians. It is being conducted for Transport Canada, who will be using the data to better understand passenger transportation needs and flows in Canada, and, so, to plan future transportation services and facilities. Thus, it is important that you report as fully as possible on all the relevant trips taken by your household.

The Statistics Canada interviewer has left this questionnaire for all members of your household to complete and will call back to pick it up on the date shown below.

We would like you and your household to take a few minutes to answer the questions on the next few pages. Answers to most questions in this survey require a check in the appropriate circle ☒ or the entering of a number in boxes provided . A few questions ask you to write a brief answer in your own words. If you should have any difficulties with a question, note this in the space for comments and ask your Statistics Canada interviewer for assistance when he/she returns. I assure you that the information given by you is confidential and will be used for statistical purposes only.

Thank you for your cooperation.

Chief Statistician of Canada

Peter G. Kirkham

1 <input type="text"/> ¹² <div style="border: 1px solid black; display: inline-block; padding: 2px;">06</div> <small>Form No</small>	2 <input type="text"/> <input type="text"/> ²³ <div style="border: 1px solid black; display: inline-block; padding: 2px;"></div> <small>Docket No</small>	3 <input type="text"/> <input type="text"/> ¹² <div style="border: 1px solid black; display: inline-block; padding: 2px;"></div> <small>M Y</small> <small>Survey Date</small>	4 <input type="text"/> <input type="text"/> ^{12 17} <div style="border: 1px solid black; display: inline-block; padding: 2px;"></div> <small>Assignment No</small>	5 <input type="text"/> <input type="text"/> ^{18 22} <div style="border: 1px solid black; display: inline-block; padding: 2px;"></div> <small>P S U</small>
<div style="border-top: 1px solid black; margin-top: 5px;"></div> <small>Interviewer signature</small>			<small>PICK UP DATE/TIME:</small>	

1 (TO BE ASKED BY THE INTERVIEWER)
 DID ANYONE IN YOUR HOUSEHOLD TAKE A TRIP OF 50 MILES OR MORE AWAY FROM HOME WHICH ENDED DURING THE PERIOD APRIL 1, 1977 TO JUNE 30, 1977 INCLUSIVE? (EXCLUDE TRIPS FOR THE PURPOSE OF COMMUTING TO WORK).

No ☐ 181 ENDYes ☐ 182 LEAVE QUESTIONNAIRE FOR HOUSEHOLD TO COMPLETE

INSTRUCTIONS

There is room below for you to record the detailed information requested for 8 different trips taken by members of your household which ended during the period April 1, 1977 to June 30, 1977 inclusive.

Include only trips which began in Canada, and were taken to places 50 miles or more away from your home, except trips for the purpose of commuting to work. Include any trip of that distance even if it does not involve an overnight stay. Also, include trips of that distance to places such as a cottage, farm, chalet, etc..

We suggest that you start with the first trip which ended during the period April 1, 1977 to June 30, 1977; then the second trip during that period; then the third trip; etc..

Check with every member of the household to make sure that all the trips that they took are recorded.

If two or more persons go together, count it as one trip.

Example 7.6

TRIP 01																																									
<p>2 WHERE DID YOU LIVE WHEN YOU TOOK THIS TRIP? * IF NOT THE SAME CITY OR TOWN AS NOW, AND YOU LIVED IN CANADA, ENTER THE CITY OR TOWN NEAREST TO WHERE YOU DID LIVE, AND THE PROVINCE.</p>	<p>Same city or town as now 103 <input type="radio"/> OR nearest city or town For office use only province 104 <input type="text"/></p>																																								
<p>3 WHERE DID YOU GO ON THIS TRIP, THAT IS, YOUR DESTINATION? * IF YOU WENT TO MORE THAN ONE PLACE, ENTER THE PLACE THAT WAS FURTHEST FROM YOUR HOME. * FOR ALL DESTINATIONS, ENTER THE COUNTRY. FOR CANADA AND THE U.S.A., ENTER THE PROVINCE OR STATE, AND THE CITY OR TOWN NEAREST TO YOUR DESTINATION.</p>	<p>country For office use only province/state 105 <input type="text"/> nearest city or town</p>																																								
<p>4 WHICH OF THE FOLLOWING HOUSEHOLD MEMBERS, INCLUDING YOURSELF, TOOK THIS TRIP?</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%;">106</td><td style="width: 10%;"><input type="checkbox"/></td><td style="width: 10%;"><input type="checkbox"/></td></tr> <tr><td>107</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>108</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>109</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>110</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>111</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>112</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>113</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table>	106	<input type="checkbox"/>	<input type="checkbox"/>	107	<input type="checkbox"/>	<input type="checkbox"/>	108	<input type="checkbox"/>	<input type="checkbox"/>	109	<input type="checkbox"/>	<input type="checkbox"/>	110	<input type="checkbox"/>	<input type="checkbox"/>	111	<input type="checkbox"/>	<input type="checkbox"/>	112	<input type="checkbox"/>	<input type="checkbox"/>	113	<input type="checkbox"/>	<input type="checkbox"/>	<p>CHECK (✓) THOSE WHO WENT</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 5%;">114</td><td style="width: 10%;"><input type="checkbox"/></td></tr> <tr><td>115</td><td><input type="checkbox"/></td></tr> <tr><td>116</td><td><input type="checkbox"/></td></tr> <tr><td>117</td><td><input type="checkbox"/></td></tr> <tr><td>118</td><td><input type="checkbox"/></td></tr> <tr><td>119</td><td><input type="checkbox"/></td></tr> <tr><td>120</td><td><input type="checkbox"/></td></tr> <tr><td>121</td><td><input type="checkbox"/></td></tr> </table>	114	<input type="checkbox"/>	115	<input type="checkbox"/>	116	<input type="checkbox"/>	117	<input type="checkbox"/>	118	<input type="checkbox"/>	119	<input type="checkbox"/>	120	<input type="checkbox"/>	121	<input type="checkbox"/>
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120	<input type="checkbox"/>																																								
121	<input type="checkbox"/>																																								
<p>5 HOW MANY OTHER HOUSEHOLD MEMBERS NOT LISTED ABOVE ALSO TOOK THIS TRIP?</p>	<p>Enter number 122 <input type="text"/></p>																																								
<p>6 WAS THIS A WEEKEND TRIP?</p>	<p>Yes 123 <input type="radio"/> No 124 <input type="radio"/></p>																																								
<p>7 WAS THIS A VACATION TRIP?</p>	<p>Yes 125 <input type="radio"/> No 126 <input type="radio"/></p>																																								
<p>8 WHAT WAS/WERE THE REASON(S) FOR TAKING THIS TRIP? <div style="text-align: right;">CHECK ALL THAT APPLY →</div></p>	<p>Business 127 <input type="radio"/> Other pleasure reasons 130 <input type="radio"/> Visiting friends or relatives. 128 <input type="radio"/> Personal reasons 131 <input type="radio"/> Shopping 129 <input type="radio"/></p>																																								
<p>9 HOW MANY NIGHTS WERE YOU AWAY FROM HOME ON THIS TRIP?</p>	<p>None 132 <input type="radio"/> OR Nights 133 <input type="text"/></p>																																								
<p>10 WHAT WAS THE MEANS OF TRANSPORTATION USED TO TRAVEL THE GREATEST DISTANCE ON THIS TRIP? INCLUDE MOTOR HOMES, TRUCKS, AND VANS WITH AUTOMOBILE. CHECK ONLY ONE →</p>	<p>Auto-mobile 134 <input type="radio"/> Rail 136 <input type="radio"/> Boat 138 <input type="radio"/> Bus 135 <input type="radio"/> Air 137 <input type="radio"/> Other 139 <input type="radio"/></p>																																								
<p>11 WHY DID YOU USE THE MEANS OF TRANSPORTATION GIVEN ABOVE (QUESTION 10), RATHER THAN SOME OTHER MEANS TO TRAVEL THE GREATEST DISTANCE ON THIS TRIP? WRITE A BRIEF ANSWER →</p>	<p>For office use only 140 <input type="text"/></p>																																								
<p>12 IN WHAT MONTH DID THIS TRIP END? CHECK ONLY ONE →</p>	<p>April .. 141 <input type="radio"/> May 142 <input type="radio"/> June 143 <input type="radio"/></p>																																								
<p>13 HOW MANY OTHER TRIPS IDENTICAL TO THIS ONE ENDED DURING THE PERIOD APRIL 1 TO JUNE 30, 1977?</p>	<p>Enter number 144 <input type="text"/></p>																																								

* COUNT AS IDENTICAL, ANY TRIP FOR WHICH ALL THE INFORMATION ABOVE IN QUESTION 2 TO 13 IS EXACTLY THE SAME.

* DO NOT COMPLETE ANOTHER TRIP REPORT COLUMN FOR THESE IDENTICAL TRIPS. CONTINUE TO LIST ONLY TRIPS WHICH ARE DIFFERENT

Example 7.6

TRIP 02	TRIP 03	TRIP 04
<p>Same city or town as now 143 <input type="radio"/></p> <p style="text-align: center;">OR</p> <p>nearest city or town 146 <input type="text"/></p> <p>province 147 <input type="text"/></p>	<p>Same city or town as now 178 <input type="radio"/></p> <p style="text-align: center;">OR</p> <p>nearest city or town 180 <input type="text"/></p> <p>province 181 <input type="text"/></p>	<p>Same city or town as now 213 <input type="radio"/></p> <p style="text-align: center;">OR</p> <p>nearest city or town 214 <input type="text"/></p> <p>province 215 <input type="text"/></p>
<p>country 148 <input type="text"/></p> <p>province/state 149 <input type="text"/></p> <p>nearest city or town 147 <input type="text"/></p>	<p>country 179 <input type="text"/></p> <p>province/state 182 <input type="text"/></p> <p>nearest city or town 181 <input type="text"/></p>	<p>country 216 <input type="text"/></p> <p>province/state 217 <input type="text"/></p> <p>nearest city or town 215 <input type="text"/></p>
<p style="text-align: center;">CHECK (✓) THOSE WHO WENT</p> <p style="text-align: center;">↓</p> <p>148 <input type="radio"/></p> <p>149 <input type="radio"/></p> <p>150 <input type="radio"/></p> <p>151 <input type="radio"/></p> <p>152 <input type="radio"/></p> <p>153 <input type="radio"/></p> <p>154 <input type="radio"/></p> <p>155 <input type="radio"/></p>	<p style="text-align: center;">CHECK (✓) THOSE WHO WENT</p> <p style="text-align: center;">↓</p> <p>182 <input type="radio"/></p> <p>183 <input type="radio"/></p> <p>184 <input type="radio"/></p> <p>185 <input type="radio"/></p> <p>186 <input type="radio"/></p> <p>187 <input type="radio"/></p> <p>188 <input type="radio"/></p> <p>189 <input type="radio"/></p>	<p style="text-align: center;">CHECK (✓) THOSE WHO WENT</p> <p style="text-align: center;">↓</p> <p>216 <input type="radio"/></p> <p>217 <input type="radio"/></p> <p>218 <input type="radio"/></p> <p>219 <input type="radio"/></p> <p>220 <input type="radio"/></p> <p>221 <input type="radio"/></p> <p>222 <input type="radio"/></p> <p>223 <input type="radio"/></p>
<p>Enter number 156 <input type="text"/></p>	<p>Enter number 190 <input type="text"/></p>	<p>Enter number 224 <input type="text"/></p>
<p>Yes 157 <input type="radio"/> No 158 <input type="radio"/></p>	<p>Yes 189 <input type="radio"/> No 192 <input type="radio"/></p>	<p>Yes 225 <input type="radio"/> No 226 <input type="radio"/></p>
<p>Yes 159 <input type="radio"/> No 160 <input type="radio"/></p>	<p>Yes 193 <input type="radio"/> No 194 <input type="radio"/></p>	<p>Yes 227 <input type="radio"/> No 228 <input type="radio"/></p>
<p>Business 161 <input type="radio"/> Other pleasure reasons 164 <input type="radio"/></p> <p>Visiting friends or relatives 162 <input type="radio"/> Personal reasons 163 <input type="radio"/></p> <p>Shopping 163 <input type="radio"/></p>	<p>Business 195 <input type="radio"/> Other pleasure reasons 198 <input type="radio"/></p> <p>Visiting friends or relatives 196 <input type="radio"/> Personal reasons 199 <input type="radio"/></p> <p>Shopping 197 <input type="radio"/></p>	<p>Business 229 <input type="radio"/> Other pleasure reasons 232 <input type="radio"/></p> <p>Visiting friends or relatives 230 <input type="radio"/> Personal reasons 231 <input type="radio"/></p> <p>Shopping 231 <input type="radio"/></p>
<p>None 165 <input type="radio"/> OR Nights 167 <input type="text"/></p>	<p>None 200 <input type="radio"/> OR Nights 201 <input type="text"/></p>	<p>None 234 <input type="radio"/> OR Nights 235 <input type="text"/></p>
<p>Auto-mobile 166 <input type="radio"/> Rail 170 <input type="radio"/> Boat 172 <input type="radio"/></p> <p>Bus 168 <input type="radio"/> Air 171 <input type="radio"/> Other 173 <input type="radio"/></p>	<p>Auto-mobile 202 <input type="radio"/> Rail 204 <input type="radio"/> Boat 206 <input type="radio"/></p> <p>Bus 203 <input type="radio"/> Air 205 <input type="radio"/> Other 207 <input type="radio"/></p>	<p>Auto-mobile 236 <input type="radio"/> Rail 238 <input type="radio"/> Boat 240 <input type="radio"/></p> <p>Bus 237 <input type="radio"/> Air 239 <input type="radio"/> Other 241 <input type="radio"/></p>
<p style="text-align: center;">For office use only</p> <p>..... 174 <input type="text"/></p>	<p style="text-align: center;">For office use only</p> <p>..... 208 <input type="text"/></p>	<p style="text-align: center;">For office use only</p> <p>..... 242 <input type="text"/></p>
<p>April 175 <input type="radio"/> May 176 <input type="radio"/> June 177 <input type="radio"/></p>	<p>April 209 <input type="radio"/> May 210 <input type="radio"/> June 211 <input type="radio"/></p>	<p>April 243 <input type="radio"/> May 244 <input type="radio"/> June 245 <input type="radio"/></p>
<p>Enter number 178 <input type="text"/></p>	<p>Enter number 212 <input type="text"/></p>	<p>Enter number 246 <input type="text"/></p>
<p>• PLEASE TURN THE PAGE TO RECORD MORE TRIPS.</p>		

Examples 7.7 to 7.9


The questionnaire for the 1976 Survey of Fitness, Physical Recreation and Sport was completed directly by respondents.

1. The sponsor is clearly identified.
2. The title is prominent.
3. A letter from the Chief Statistician describes the purpose of the survey, asks for cooperation and assures the respondent of confidentiality of responses given.
4. The control information is needed for administrative purposes and "cleaning" of computer tapes.
5. Availability of a questionnaire in the other official language is stated, along with instructions for obtaining one.
6. The first question is prominently marked.
7. In order to eliminate excessive repetition of the questions for each category of answer requested, a somewhat novel arrangement of the questions and answer spaces was used on the interior pages.

Another approach would have been to use a conventional tabular arrangement with questions down the left side and each category listed across the top of the table. However, this ruled layout would have been quite unappealing to respondents.

8. There is little chance of respondents forgetting a question because of the unusually large numbers used to identify the questions. These large numbers are particularly useful for maintaining the correct sequence of questions 42 to 54, where some questions are in a vertical arrangement while others are side-by-side. The particular arrangement used depends on the amount and shape of the space required for each question.
9. Although this layout appears extremely difficult to plan, this does not hold true. A draft of each question is prepared and cut out. The questions (each on its own slip of paper) are "floated" about on a page-size sheet of paper until the designer is satisfied with the result. This technique may also result in the sequence being changed to obtain a better fit on the page, so long as the logical sequence of questions is not upset.
10. Each page (or set of two pages) has a prominent identifier of the subject matter, together with a few statements which are intended to establish the desired frame of reference for that page (or pages).

Example 7.7

 Statistics Canada Statistique Canada

Spécial Surveys Co-ordination Division

1976 SURVEY OF FITNESS, PHYSICAL RECREATION & SPORT

October 1976

Dear Respondent,


The purpose of this survey is to provide comprehensive data on Canadian participation in fitness, physical recreation and sport activities. It is being conducted for the Fitness and Amateur Sport Branch of Health and Welfare Canada. Data from the survey will be analysed by the Fitness and Amateur Sport Branch to aid in the planning and development of new programs, and in the investigation of exercise, physical recreation and sport participation of Canadians.

The Statistics Canada interviewer has left this questionnaire for you to complete and will call back to pick it up on the date shown below.

We would like you to take a few minutes to answer the questions on the next few pages. Answers to most questions in this survey require only a check mark in the appropriate box ☒ or circle ☒. If you should have any difficulties with a question, note this in the space on the back of the form and ask your Statistics Canada interviewer for assistance when he/she returns. I assure you that the information given by you is confidential and will be used for statistical purposes only.

Thank you for your co-operation.

Peter G. Kirkham.



Chief Statistician of Canada.

This survey is conducted by Statistics Canada on behalf of the Fitness and Amateur Sport Branch, Health and Welfare Canada, under authority of the Statistics Act, Chapter 15, Statutes of Canada 1970-71-72.

1 FORM NO	06	2 Docket No	3 Survey date	4 Assignment No	5 1
6 HRD	7	Name of household members			8 Age
Pg	Ln				
Given name					
Surname					

Ce questionnaire est disponible dans les deux langues officielles. Si vous désirez obtenir un questionnaire dans l'autre langue, veuillez téléphoner au numéro.



This questionnaire is available in both official languages. If you require a questionnaire in the other official language please call this number

This questionnaire will be picked up by your interviewer on

INTERVIEWER

START HERE

1

Do you suffer from any illness or handicap which prevented your participation in physical recreation or sport activities during the entire last 12 months?

☐ 101 Yes ☐ 102 No → Go to Question 2
↓
Go to Question 40

Example 7.8

This section of the Questionnaire deals with your participation in exercise activities within the last month. Although sport and physical recreation activities are examined in the next section of the Questionnaire, any sport or physical recreation activity which you do primarily for exercise may be included in the Other (Specify) category of Question 3.

2 Have you engaged in any EXERCISE ACTIVITIES WITHIN THE LAST MONTH?

☐ ¹⁰¹ Yes ☐ ¹⁰⁴ No → Go to Question 12

6

3 Please indicate whether or not you have engaged in any of the following exercise activities **WITHIN THE LAST MONTH?**

4 HOW MANY TIMES WITHIN THE LAST MONTH did you engage in each activity marked "YES" in Question 3?

5 How many minutes do you usually spend doing the activity **ON EACH OCCASION?**

Check "Yes" or "No" for each activity
For those activities marked yes answer questions 4 through 9

Times in the last month

Minutes each time
15 or less 16 to 30 31 to 60 More than 60

Walking for Exercise	<input type="radio"/> ¹⁰⁵ No	<input type="radio"/> ¹⁰⁶ Yes	→ Do 4, 5, 6, 7, 8, 9
Jogging/Running	<input type="radio"/> ¹⁰⁷ No	<input type="radio"/> ¹⁰⁸ Yes	→ Do 4, 5, 6, 7, 8, 9
Calisthenics (pushups, situps, etc.)	<input type="radio"/> ¹⁰⁹ No	<input type="radio"/> ¹¹⁰ Yes	→ Do 4, 5, 6, 7, 8, 9
Swimming for exercise	<input type="radio"/> ¹¹¹ No	<input type="radio"/> ¹¹² Yes	→ Do 4, 5, 6, 7, 8, 9
Yoga	<input type="radio"/> ¹¹³ No	<input type="radio"/> ¹¹⁴ Yes	→ Do 4, 5, 6, 7, 8, 9
Weight Lifting/ Training	<input type="radio"/> ¹¹⁵ No	<input type="radio"/> ¹¹⁶ Yes	→ Do 4, 5, 6, 7, 8, 9
Bicycling for exercise	<input type="radio"/> ¹¹⁷ No	<input type="radio"/> ¹¹⁸ Yes	→ Do 4, 5, 6, 7, 8, 9
Skipping rope	<input type="radio"/> ¹¹⁹ No	<input type="radio"/> ¹²⁰ Yes	→ Do 4, 5, 6, 7, 8, 9
Other (specify) _____			

<input type="text"/>	<input type="text"/>	122-123
<input type="text"/>	<input type="text"/>	124-125
<input type="text"/>	<input type="text"/>	126-127
<input type="text"/>	<input type="text"/>	128-129
<input type="text"/>	<input type="text"/>	130-131
<input type="text"/>	<input type="text"/>	132-133
<input type="text"/>	<input type="text"/>	134-135
<input type="text"/>	<input type="text"/>	136-137
<input type="text"/>	<input type="text"/>	874-875

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	138
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	142
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	146
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	150
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	154
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	158
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	162
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	166
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	170

NOTE: If you engaged in any activity primarily for exercise which is not listed above, please include it in the Other (Specify) category of Question 3.

10 Please indicate the MAIN reason(s) you engaged in these exercises. Check one or more reasons

☐ ³⁰⁰ FOR GOOD HEALTH:
good for my heart; to keep in shape; to stay in good physical condition; I can breathe better, etc.

☐ ³⁰² GOOD FOR ME IN GENERAL:
makes me feel better; good for me; I feel like it's good for me; etc.

☐ ³⁰⁴ TO LOSE WEIGHT:
to keep slim; I like to keep my shape; I'm a little on the heavy side; to flatten my stomach; etc.

☐ ³⁰¹ ENJOYMENT:
I like doing it; for pleasure and recreation; for fun; for excitement; etc.

☐ ³⁰³ FOR THE RELEASE OF TENSION:
for relaxation; to get away from it all; to unwind, etc.

☐ ³⁰⁵ DOCTOR TOLD ME TO:
physical therapy; post coronary recovery; prescribed exercise, etc.

☐ ³⁰⁶ OTHER REASONS:
to be with my family; no particular reason; compulsory at work or school; etc.

(specify)

11 In the last month, when did you usually exercise?

☐ ³⁰⁷ Weekdays ☐ ³⁰⁸ Weekends ☐ ³⁰⁹ Both

office use only ¹²¹ ⁹⁹⁹

Example 7.8

EXERCISE

WITH WHOM did you USUALLY engage in each activity marked "Yes" in Question 3?

7

AT WHAT INTENSITY did you USUALLY exercise in each activity marked "Yes" in Question 3?

8

AT WHAT TIME(S) OF DAY did you USUALLY engage in each activity marked "Yes" in Question 3?

9

WHERE did you USUALLY engage in each activity marked "Yes" in Question 3?

Alone	With an individual or group	Much perspiring/ Rapid breathing	Some perspiring/ Above normal breathing	Only slight difference from normal state	Check one or more Morn- After Eve- ings noons nings	At home	Public recreation facility	Commercial facility or private club	At work or at school	Outside using no special facility	Other		
<input type="checkbox"/> 174	<input type="checkbox"/> 175	<input type="checkbox"/> 182	<input type="checkbox"/> 193	<input type="checkbox"/> 194	<input type="checkbox"/> 219	<input type="checkbox"/> 220	<input type="checkbox"/> 221	<input type="checkbox"/> 246	<input type="checkbox"/> 247	<input type="checkbox"/> 248	<input type="checkbox"/> 249	<input type="checkbox"/> 250	<input type="checkbox"/> 251
<input type="checkbox"/> 176	<input type="checkbox"/> 177	<input type="checkbox"/> 196	<input type="checkbox"/> 198	<input type="checkbox"/> 199	<input type="checkbox"/> 222	<input type="checkbox"/> 223	<input type="checkbox"/> 224	<input type="checkbox"/> 252	<input type="checkbox"/> 253	<input type="checkbox"/> 254	<input type="checkbox"/> 255	<input type="checkbox"/> 256	<input type="checkbox"/> 257
<input type="checkbox"/> 178	<input type="checkbox"/> 179	<input type="checkbox"/> 198	<input type="checkbox"/> 199	<input type="checkbox"/> 200	<input type="checkbox"/> 225	<input type="checkbox"/> 226	<input type="checkbox"/> 227	<input type="checkbox"/> 258	<input type="checkbox"/> 259	<input type="checkbox"/> 260	<input type="checkbox"/> 261	<input type="checkbox"/> 262	<input type="checkbox"/> 263
<input type="checkbox"/> 180	<input type="checkbox"/> 181	<input type="checkbox"/> 201	<input type="checkbox"/> 202	<input type="checkbox"/> 203	<input type="checkbox"/> 228	<input type="checkbox"/> 229	<input type="checkbox"/> 230	<input type="checkbox"/> 264	<input type="checkbox"/> 265	<input type="checkbox"/> 266	<input type="checkbox"/> 267	<input type="checkbox"/> 268	<input type="checkbox"/> 269
<input type="checkbox"/> 182	<input type="checkbox"/> 183	<input type="checkbox"/> 204	<input type="checkbox"/> 205	<input type="checkbox"/> 206	<input type="checkbox"/> 231	<input type="checkbox"/> 232	<input type="checkbox"/> 233	<input type="checkbox"/> 270	<input type="checkbox"/> 271	<input type="checkbox"/> 272	<input type="checkbox"/> 273	<input type="checkbox"/> 274	<input type="checkbox"/> 275
<input type="checkbox"/> 184	<input type="checkbox"/> 185	<input type="checkbox"/> 207	<input type="checkbox"/> 208	<input type="checkbox"/> 209	<input type="checkbox"/> 234	<input type="checkbox"/> 235	<input type="checkbox"/> 236	<input type="checkbox"/> 276	<input type="checkbox"/> 277	<input type="checkbox"/> 278	<input type="checkbox"/> 279	<input type="checkbox"/> 280	<input type="checkbox"/> 281
<input type="checkbox"/> 186	<input type="checkbox"/> 187	<input type="checkbox"/> 210	<input type="checkbox"/> 211	<input type="checkbox"/> 212	<input type="checkbox"/> 237	<input type="checkbox"/> 238	<input type="checkbox"/> 239	<input type="checkbox"/> 282	<input type="checkbox"/> 283	<input type="checkbox"/> 284	<input type="checkbox"/> 285	<input type="checkbox"/> 286	<input type="checkbox"/> 287
<input type="checkbox"/> 188	<input type="checkbox"/> 189	<input type="checkbox"/> 213	<input type="checkbox"/> 214	<input type="checkbox"/> 215	<input type="checkbox"/> 240	<input type="checkbox"/> 241	<input type="checkbox"/> 242	<input type="checkbox"/> 288	<input type="checkbox"/> 289	<input type="checkbox"/> 290	<input type="checkbox"/> 291	<input type="checkbox"/> 292	<input type="checkbox"/> 293
<input type="checkbox"/> 190	<input type="checkbox"/> 191	<input type="checkbox"/> 216	<input type="checkbox"/> 217	<input type="checkbox"/> 218	<input type="checkbox"/> 243	<input type="checkbox"/> 244	<input type="checkbox"/> 245	<input type="checkbox"/> 294	<input type="checkbox"/> 295	<input type="checkbox"/> 296	<input type="checkbox"/> 297	<input type="checkbox"/> 298	<input type="checkbox"/> 299

12

Which of the following would increase your interest in exercising more or beginning to exercise in the future?
Check one or more

- | | |
|---|--|
| <input type="checkbox"/> 310 Better/closer/less expensive facilities | <input type="checkbox"/> 311 Organized fitness classes with exercise programs prescribed by a professional or expert |
| <input type="checkbox"/> 312 More information on the benefits of exercising | <input type="checkbox"/> 312 I am satisfied with my present level of exercise |
| <input type="checkbox"/> 314 More leisure time | <input type="checkbox"/> 315 Other (specify) _____ |
| <input type="checkbox"/> 316 An individual or group to exercise with | |

13

Comparing yourself to others of your own age and sex, would you say that

- you are
- | | |
|------------------------------|------------------------|
| <input type="checkbox"/> 318 | More fit |
| <input type="checkbox"/> 319 | Less fit |
| <input type="checkbox"/> 320 | About the same fitness |

office use only

Example 7.9

The following section deals with your participation in other leisure activities.

OTHER LEISURE ACTIVITIES

42 Please indicate whether or not you have engaged in any of the following leisure activities **WITHIN THE LAST MONTH**.

43 HOW MANY HOURS IN A TYPICAL WEEK DURING THE LAST MONTH, did you spend doing each activity marked "Yes" in Question 42?

Check "Yes" or "No" for each activity.

For those activities

marked yes
answer Question 43

Number of hours spent in a typical week

Less than 3 hours 3 - 7 hours 8 - 14 hours 15 - 29 hours 30 or more hours

Watching TV

☐ 678 No ☐ 679 Yes ☐ 698 ☐ 699 ☐ 700 ☐ 701 ☐ 702

Listening to the radio

☐ 680 No ☐ 681 Yes ☐ 703 ☐ 704 ☐ 705 ☐ 706 ☐ 707

Listening to records tapes or cassettes

☐ 682 No ☐ 683 Yes ☐ 708 ☐ 709 ☐ 710 ☐ 711 ☐ 712

Reading books for leisure

☐ 684 No ☐ 685 Yes ☐ 713 ☐ 714 ☐ 715 ☐ 716 ☐ 717

Reading newspapers, magazines for leisure

☐ 686 No ☐ 687 Yes ☐ 718 ☐ 719 ☐ 720 ☐ 721 ☐ 722

Socializing or visiting with friends or relatives

☐ 688 No ☐ 689 Yes ☐ 723 ☐ 724 ☐ 725 ☐ 726 ☐ 727

Engaging in a craft or hobby (photography, sewing, woodwork, etc.)

☐ 690 No ☐ 691 Yes ☐ 728 ☐ 729 ☐ 730 ☐ 731 ☐ 732

Doing yard maintenance - home repairs

☐ 692 No ☐ 693 Yes ☐ 733 ☐ 734 ☐ 735 ☐ 736 ☐ 737

Playing bingo, cards, chess, other games

☐ 694 No ☐ 695 Yes ☐ 738 ☐ 739 ☐ 740 ☐ 741 ☐ 742

Dancing

☐ 696 No ☐ 697 Yes ☐ 743 ☐ 744 ☐ 745 ☐ 746 ☐ 747

44 Please indicate whether or not you have attended or participated in any of the following leisure activities **WITHIN THE LAST MONTH**.

45 HOW MANY TIMES WITHIN THE LAST MONTH did you attend each activity marked "Yes" in Question 44?

Check "Yes" or "No" for each activity.

For those activities

marked yes
answer Question 45

Number of times within the last month

1 2 3 4 5 or more

Attended a movie or other film

☐ 748 No ☐ 749 Yes ☐ 764 ☐ 765 ☐ 766 ☐ 767 ☐ 768

Attended a musical performance or recital

☐ 750 No ☐ 751 Yes ☐ 769 ☐ 770 ☐ 771 ☐ 772 ☐ 773

Attended a live theatre production, a ballet or other dance performance

☐ 752 No ☐ 753 Yes ☐ 774 ☐ 775 ☐ 776 ☐ 777 ☐ 778

Attended a sports event as a spectator

☐ 754 No ☐ 755 Yes ☐ 779 ☐ 780 ☐ 781 ☐ 782 ☐ 783

Visited a cultural centre (museum, art gallery, library, etc.)

☐ 756 No ☐ 757 Yes ☐ 784 ☐ 785 ☐ 786 ☐ 787 ☐ 788

Visited a craft fair, festival, circus, zoo, or exhibition

☐ 758 No ☐ 759 Yes ☐ 789 ☐ 790 ☐ 791 ☐ 792 ☐ 793

Participated in community activities such as church groups, service groups, etc.

☐ 760 No ☐ 761 Yes ☐ 794 ☐ 795 ☐ 796 ☐ 797 ☐ 798

Attended a class

☐ 762 No ☐ 763 Yes ☐ 799 ☐ 800 ☐ 801 ☐ 802 ☐ 803

Example 7.9

This section collects information which is useful in grouping your replies with other Canadians in this survey.

ABOUT YOURSELF

46 Were you born in Canada?

☐ ^{B04} Yes

☐ ^{B05} No

In which province or territory of Canada were you born?

☐ ^{B06} Newfoundland

☐ ^{B07} Nova Scotia

☐ ^{B08} New Brunswick

☐ ^{B09} Prince Edward Island

☐ ^{B10} Quebec

☐ ^{B11} Ontario

☐ ^{B12} Manitoba

☐ ^{B13} Saskatchewan

☐ ^{B14} Alberta

☐ ^{B15} British Columbia

☐ ^{B16} N.W.T. Yukon

In which country were you born?

☐ ^{B17} Great Britain

☐ ^{B18} United States

☐ ^{B19} Germany

☐ ^{B20} Italy

☐ ^{B21} France

☐ ^{B22} Other (specify)

Print country of birth

47

What language do you most often speak at home?

☐ ^{B23} English

☐ ^{B24} French

☐ ^{B25} German

☐ ^{B26} Italian

☐ ^{B27} Other (specify)

48

When you were 13 years old what was the population of the city, town, village, municipality in which you were living?

☐ ^{B28} 100,000 or more

☐ ^{B29} 30,000 to 99,999

☐ ^{B30} 15,000 to 29,999

☐ ^{B31} 1,000 to 14,999

☐ ^{B32} less than 1,000

☐ ^{B33} don't know

49

How tall are you?

☐ ^{B34} Feet

☐ ^{B35} Inches

OR ☐ ^{B36} Centimetres

51

To what extent has your weight changed or fluctuated over the past 12 months?

Check only one

☐ ^{B37} Remained steady to within 5 pounds/ 2.3 kilograms

☐ ^{B38} Fluctuated 6 to 10 pounds/ 2.7 to 4.5 kilograms

☐ ^{B39} Fluctuated more than 10 pounds/ 4.5 kilograms

50

How much do you weigh?

check only one

90 and less lbs <input type="checkbox"/> ^{B40} kg	91-100 lbs <input type="checkbox"/> ^{B41} kg	101-110 lbs <input type="checkbox"/> ^{B42} kg	111-120 lbs <input type="checkbox"/> ^{B43} kg	121-130 lbs <input type="checkbox"/> ^{B44} kg
40.9 and less	41.4-45.5	45.9-50.0	50.4-54.5	55.0-59.1
131-140 lbs <input type="checkbox"/> ^{B45} kg	141-150 lbs <input type="checkbox"/> ^{B46} kg	151-160 lbs <input type="checkbox"/> ^{B47} kg	161-170 lbs <input type="checkbox"/> ^{B48} kg	171-180 lbs <input type="checkbox"/> ^{B49} kg
59.5-63.6	64.1-68.2	68.6-72.7	73.2-77.3	77.7-81.8
181-190 lbs <input type="checkbox"/> ^{B50} kg	191-200 lbs <input type="checkbox"/> ^{B51} kg	201-210 lbs <input type="checkbox"/> ^{B52} kg	211-220 lbs <input type="checkbox"/> ^{B53} kg	Over 220 lbs <input type="checkbox"/> ^{B54} kg
82.3-86.6	86.8-90.9	91.4-95.4	95.9-100.0	Over 100

52

In the last 12 months, has your doctor told you that you suffer from a heart related ailment?

☐ ^{B55} Have not seen a doctor

☐ ^{B56} No

☐ ^{B57} Yes

53

What was your total personal income before taxes and deductions in the last 12 months from all sources? (include earnings from employment, pensions, family allowances, interest, dividends, rents) (Please check one box)

☐ ^{B58} None

☐ ^{B59} Less than \$4,000

☐ ^{B60} \$4,000-6,999

☐ ^{B61} \$7,000-9,999

☐ ^{B62} \$10,000 - 14,999

☐ ^{B63} \$15,000-19,999

☐ ^{B64} \$20,000-29,999

☐ ^{B65} \$30,000 or over

54

How many automobiles are available for use by members of your household?

☐ ^{B66} None

☐ ^{B67} One

☐ ^{B68} Two

☐ ^{B69} Three or more

office use only

THANK YOU FOR PARTICIPATING IN THIS SURVEY!

We would appreciate any comments which you wish to make on government programs related to fitness and amateur sport. Please use the next page to do so

Examples 7.10 to 7.17

The Automobile Fuel Consumption Survey was conducted by means of the following steps:


- (a) Obtain a listing of licenced automobiles from the respective provincial governments.
- (b) Select a sample of these automobiles.
- (c) Telephone the owner of each automobile in the sample; complete a screening questionnaire for that automobile to verify its identity and whereabouts; and solicit the owner's cooperation with the survey.
- (d) Send the owner a diary-type questionnaire for the recording of all fuel purchases for that automobile within a specified four-week period.
- (e) Contact the owner by telephone about one week into the survey period to sustain motivation to complete the diary, and to answer any questions which the owner might have.
- (f) The diary was to be returned by mail (postage prepaid) at the end of the survey period.

Page 89 shows the original screening questionnaire prior to the pretest. Page 90 shows the revised screening questionnaire which was actually used in the main survey.

The differences between these two versions are interesting. Some problems which were originally anticipated did not emerge as problems, while others which were not anticipated did emerge, such as the number of times that ownership has been transferred between the time of registration and the time of the survey.

Pages 91, 92 and 93 show the front few pages of the questionnaire which was in loose-leaf form in a 3-ring binder.

Example 7.10

 Statistics Canada Statistique Canada		CONFIDENTIAL when completed
AUTOMOBILE FUEL CONSUMPTION SURVEY SCREENING QUESTIONNAIRE		
AFC-01		
Identification No 		
INTRODUCTION: FIRST I WOULD LIKE TO MAKE SURE THAT THE INFORMATION ABOUT YOUR VEHICLE IS CORRECT.		
1 DO YOU PRESENTLY OWN A ... (Read description below)?		
Colour Model Year 		
Make 		
Model 		
Licence Plate Number 		
Yes (The information is correct) 1 <input type="radio"/> GO TO 8		
Yes (One or two corrections required) 2 <input type="radio"/> GO TO 2		
No (Does not own this vehicle) 3 <input type="radio"/> GO TO 3		
2 INTERVIEWER: Make necessary corrections, THEN GO TO 8		
Colour Model Year 		
Make 		
Model 		
Licence Plate Number 		
3 DID YOU EVER OWN THIS VEHICLE?		
Yes 1 <input type="radio"/> No 2 <input type="radio"/> END		
4 WHAT HAPPENED TO THIS VEHICLE WHEN YOU STOPPED OWNING IT?		
Has been sold/given away 1 <input type="radio"/> GO TO 6		
Has been scrapped ... 2 <input type="radio"/>		
Other (specify) 3 <input type="radio"/> GO TO 5		
5 WHEN WAS THIS VEHICLE SCRAPPED/ (Read "other" from question 4)?		
Month Year END		
6 WHEN WAS THIS VEHICLE SOLD/GIVEN AWAY?		
Month Year 		
7 ARE THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE NEW OWNER AVAILABLE?		
Yes 1 <input type="radio"/> Record below and END No 2 <input type="radio"/> END		
Name 		
Address 		
Telephone 		
8 IS THIS VEHICLE A VAN, TRUCK, TRAILER, CAMPER, MOTOR HOME, OR MOTORCYCLE?		
Yes 1 <input type="radio"/> END No 2 <input type="radio"/>		
9 IS THIS VEHICLE USED:		
As a personal vehicle? 1 <input type="radio"/>		
In a leasing service? 2 <input type="radio"/>		
As a rent-a-car? 3 <input type="radio"/>		
As a fleet operated vehicle (such as a taxi)? 4 <input type="radio"/>		
As a competition vehicle (such as a stock car)? 5 <input type="radio"/> END		
As a police, fire, or ambulance vehicle? 6 <input type="radio"/>		
As a diplomatic vehicle, or as a funeral hearse? 7 <input type="radio"/>		
In delivery, inspection, or protection service? 8 <input type="radio"/>		
10 IN WHAT MONTH AND YEAR DID YOU OBTAIN THIS AUTOMOBILE?		
Jan - Mar 1 <input type="radio"/> July - Sep 1 <input type="radio"/>		
Apr - Jun 2 <input type="radio"/> Oct - Dec 2 <input type="radio"/>		
Year 		
11 WHEN YOU PURCHASED THIS AUTOMOBILE, WAS IT ...		
A demonstrator? 1 <input type="radio"/> A brand new 3 <input type="radio"/>		
A used automobile? 2 <input type="radio"/> automobile 4 <input type="radio"/> GO TO 13		
Don't know 4 <input type="radio"/>		
12 HOW MANY MILES (KILOMETRES) WERE RECORDED ON THIS AUTOMOBILE'S ODOMETER WHEN IT WAS PURCHASED?		
Miles OR Kilometres 		
Don't know ... 3 <input type="radio"/>		
13 IS THIS AUTOMOBILE BEING OPERATED AT THE PRESENT TIME?		
Yes 1 <input type="radio"/> No 2 <input type="radio"/> END		
14 ARE YOU THE PRINCIPAL DRIVER OF THIS AUTOMOBILE?		
Yes 1 <input type="radio"/> GO TO 16 No 2 <input type="radio"/> GO TO 15		
15 INTERVIEWER: Read explanation of part 2, and ask WHAT IS THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE PRINCIPAL DRIVER OF THIS AUTOMOBILE?		
Name 		
Address 		
Telephone 		
16 INTERVIEWER: Read explanation of part 2, and ask IS THIS YOUR CORRECT ADDRESS?		
Yes 1 <input type="radio"/> END No 2 <input type="radio"/> Record changes below and END		

Example 7.11

Statistics Canada Statistique Canada	
PC - 01	PASSENGER CAR FUEL CONSUMPTION SURVEY SCREENING QUESTIONNAIRE
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;"> CONFIDENTIAL when completed </div> <small>Authority - Statistics Act, Chapter 15, Statutes of Canada 1970-71-72.</small> Identification Number <div style="border: 1px solid black; display: inline-block; width: 100px; height: 15px;"></div>	

VEHICLE DESCRIPTION: Make <div style="border: 1px solid black; width: 100%; height: 15px;"></div> Model <div style="border: 1px solid black; width: 100%; height: 15px;"></div> Licence Plate Number <div style="border: 1px solid black; width: 100%; height: 15px;"></div> Model Year <div style="border: 1px solid black; width: 100%; height: 15px;"></div> Serial Number <div style="border: 1px solid black; width: 100%; height: 15px;"></div>	REGISTERED OWNER: NOTES:
INTERVIEWER: <input type="checkbox"/> Total contact attempts made by phone	

OWNER # 1:

1. DO YOU PRESENTLY OWN A ... (READ VEHICLE DESCRIPTION)?

Yes ☐ go to 5 No (never owned) ☐ END

Yes (corrections) ☐ go to 4 No (once owned) ☐ go to 2

2. WHAT HAPPENED TO THIS CAR WHEN YOU STOPPED OWNING IT?

Sold/given away/traded in ☐ go to 3

Scrapped
☐ demolished in accident
☐ no longer roadworthy
 } END

3. ARE THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE NEW OWNER AVAILABLE?

Yes ☐ record below No ☐ END

Name _____

Address _____

Telephone _____

Notes: _____

TRACE AND GO TO OWNER # 2.

OWNER # 2:

1. DO YOU PRESENTLY OWN A ... (READ VEHICLE DESCRIPTION)?

Yes ☐ go to 5 No (never owned) ☐ END

Yes (corrections) ☐ go to 4 No (once owned) ☐ go to 2

2. WHAT HAPPENED TO THIS CAR WHEN YOU STOPPED OWNING IT?

Sold/given away/traded in ☐ go to 3

Scrapped
☐ demolished in accident
☐ no longer roadworthy
 } END

3. ARE THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE NEW OWNER AVAILABLE?

Yes ☐ record below No ☐ END

Name _____

Address _____

Telephone _____

Notes: _____

TRACE AND GO TO OWNER # 3

OWNER # 3:

1. DO YOU PRESENTLY OWN A ... (READ VEHICLE DESCRIPTION)?

Yes ☐ go to 5 No (never owned) ☐ END

Yes (corrections) ☐ go to 4 No (once owned) ☐ go to 2

2. WHAT HAPPENED TO THIS CAR WHEN YOU STOPPED OWNING IT?

Sold/given away/traded in ☐ go to 3

Scrapped
☐ demolished in accident
☐ no longer roadworthy
 } END

3. ARE THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE NEW OWNER AVAILABLE?

Yes ☐ record below No ☐ END

Name _____


Address _____

Telephone _____

Notes: _____

GO TO NEW SCREENING QUESTIONNAIRE

Example 7.12



STATISTICS CANADA
PC-02

CONFIDENTIAL
when completed.

Authority: Statistics Act,
Chapter 96, Statutes of
Canada 1970-71-72.

Identification Number

PASSENGER CAR FUEL CONSUMPTION SURVEY FUEL PURCHASE DIARY

This diary is for recording fuel purchases and answers to a few questions about this car.

Make

Model

Make

License plate number

Model

Year

All fuel purchases made during the diary period July 1, 1979 to July 31, 1979 are to be recorded.

As the principal driver of this car, we ask you to make sure that any other drivers also record the fuel purchases they make for this car.

The next few pages include instructions for using the diary, and a method for calculating the fuel consumption rate of this car.

In order to calculate the fuel consumption rate of a car, it is necessary that at least two purchases are fill-ups. The most accurately calculated rate is obtained when the gas tank is filled for both the first and the last fuel purchases.

The Passenger Car Usage Questionnaire enclosed with this diary is to record details of the trips made using this car during the diary period. We ask you to complete this questionnaire at the end of the diary period.

K 3400-4-1903-79 9 8011 96

1979

1980

1981

1982

Example 7.13

PASSENGER CAR DESCRIPTION QUESTIONNAIRE

Identification Number

1. The cover page contains the information our interviewer has obtained about your car. If this information is incorrect or incomplete, please make the necessary corrections in the spaces provided below.

Make

Model

Year

2. How many cylinders does this car have?

Four ¹ ☐

Six ² ☐

Eight ³ ☐

Other (specify) ⁴

3. Is this car equipped with

Automatic transmission? ¹ ☐

Yes ² ☐

No ³ ☐

Air conditioning? ¹ ☐

Yes ² ☐

No ³ ☐

4. Does the odometer of this car register in kilometres or miles?

Kilometres ☐

Miles ☐

5. In what month and year did you obtain this car?

January ⁰¹ ☐

May ⁰⁵ ☐

September ⁰⁹ ☐

February ⁰² ☐

June ⁰⁶ ☐

October ¹⁰ ☐

March ⁰³ ☐

July ⁰⁷ ☐

November ¹¹ ☐

April ⁰⁴ ☐

August ⁰⁸ ☐

December ¹² ☐

6. Approximately how many kilometers (miles) were recorded on this car's odometer when it was obtained? (Do not record tenths of a kilometer (mile))

kilometers (miles)

K 3400-47

1979

1980

1981

1982

Example 7.18

CONFIDENTIAL

SURVEY OF NON HUNTERS OF MIGRATORY GAME BIRDS IN
NEW BRUNSWICK DURING 1977-78 SEASON

CANADIAN WILDLIFE SERVICE

HELP US
SERVE YOU BETTER



Purpose: We need to get a better understanding of the people who may have purchased a Canada Migratory Game Bird Hunting Permit in New Brunswick but did not hunt Migratory Game Birds. Your answers to the following questions will help us do this. All replies are strictly confidential.

Instructions: Please answer the short questionnaire by placing a simple check mark (✓) in the small boxes.

1. (a) Did you get a Canada Migratory Game Bird Hunting Permit in 1977? (check one) ... Yes ☐ No ☐
- (b) Did you get a Canada Migratory Game Bird Hunting Permit in 1976? ... Yes ☐ No ☐
2. (a) In the 1977-78 season did you hunt Migratory Game Birds? ...
- (b) In the 1977-78 season did you hunt other game? ...
- (c) In the 1977-78 season did you do any sport fishing? ...

3. Do you remember receiving a questionnaire on Migratory Game Birds (other than this one) from the Canadian Wildlife Service during the 1977-78 season? ...

NOTE: Please answer question 4 below only if you did not buy a Migratory Game Bird Hunting Permit in 1977-78.

4. (a) If you did not buy a Migratory Game Bird Hunting Permit in 1977-78, please indicate several reasons why you did not buy a Permit or why you did not hunt Migratory Game Birds in 1977-78.

The Survey of Non-Hunters ... is conducted by mail.
Active hunters receive a generally similar questionnaire.
The mailing lists for these surveys are compiled from the
lists of purchasers of migratory game bird hunting permits
and from lists of persons active in game conservation.
The picture of a game bird on the questionnaire has been
found to increase the interest of this special-interest
group, and thereby to increase the response rate of the
survey.

- | | |
|--|------------------------------|
| ... is too dangerous ... | <input type="checkbox"/> 07 |
| ... is too expensive ... | <input type="checkbox"/> 08 |
| ... I don't have time ... | <input type="checkbox"/> 09 |
| ... I don't like killing birds ... | <input type="checkbox"/> 10 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 11 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 12 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 13 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 14 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 15 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 16 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 17 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 18 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 19 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 20 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 21 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 22 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 23 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 24 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 25 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 26 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 27 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 28 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 29 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 30 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 31 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 32 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 33 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 34 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 35 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 36 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 37 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 38 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 39 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 40 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 41 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 42 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 43 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 44 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 45 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 46 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 47 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 48 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 49 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 50 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 51 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 52 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 53 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 54 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 55 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 56 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 57 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 58 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 59 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 60 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 61 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 62 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 63 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 64 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 65 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 66 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 67 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 68 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 69 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 70 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 71 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 72 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 73 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 74 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 75 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 76 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 77 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 78 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 79 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 80 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 81 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 82 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 83 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 84 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 85 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 86 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 87 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 88 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 89 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 90 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 91 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 92 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 93 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 94 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 95 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 96 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 97 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 98 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 99 |
| ... I don't like the idea of killing birds ... | <input type="checkbox"/> 100 |

- (b) In 4(a) above, please underline the one most important reason for not buying a Permit or not hunting Migratory Game Birds in 1977-78.

Thank you very much for your cooperation. Please return the questionnaire today using the special postage paid envelope.

Examples 7.19 and 7.20

The Client Satisfaction Survey was conducted entirely by mail. The respondents were a sample of persons receiving veterans' benefits, or their surviving dependants.

Page 96 shows a page of the draft questionnaire which was pretested among some 50 veterans. It was prepared using only a typewriter and a felt pen.

Page 97 shows the same page as it was revised for the main survey.

1. Arrows clearly indicate the skip patterns. This was particularly important because many of the respondents are elderly and would likely have less than perfect eyesight.
2. All entry spaces are clearly marked.
3. The questions about politeness were re-worded.
4. Questions are not crowded on a page.
5. Each questionnaire was serially numbered for administrative purposes during collection and data capture.
6. Key-punch codes are printed down the right margin.

Example 7.19

1. During the past year, have you visited an office of the Department of Veterans Affairs?

☐

Yes

☐

No

☐

Not Sure

If you answered ☒ Yes, please complete this question; otherwise, please go directly to question 2.

If you have visited:

- a) Was it difficult to find the office?
b) Were the office employees polite?
c) Were you kept waiting for a long time?

☐

Yes

☐

No

☐

Yes

☐

No

☐

Yes

☐

No

2. During the past year, has someone from the Department of Veterans Affairs visited you?

☐

Yes

☐

No

☐

Not Sure

If you answered Yes, please complete this question; otherwise, please go directly to question 3.

If someone has visited you:

- a) Was this person polite?
b) If you were asked for information, did the person explain clearly why it was needed?
c) If you were given information, did you understand clearly what you were told?
d) Did you get an answer to all your questions?

☐

Yes

☐

No

☐

Not Sure

☐

Yes

☐

No

☐

Not Sure

☐

Yes

☐

No

☐

Not Sure

☐

Yes

☐

No

☐

Not Sure

Example 7.20

Nº 6161

2345

1. During the past year, have you visited a representative of DVA?

☐ Yes

☐ No

☐ Not Sure

Please go directly to question 2.

Let's think about your last visit.

a) Was it difficult to find this person?

☐ Yes ☐ No

b) Do you think this person kept you waiting too long?

☐ Yes ☐ No

c) Do you think this person was kind?

☐ Yes ☐ No

d) Where was your visit? ☐ at a hospital

☐ at a Legion Hall

☐ at a DVA office

☐ elsewhere

Did you get medical treatment?

☐ Yes ☐ No

2. During the past year, has someone from DVA visited you?

☐ Yes

☐ No

☐ Not Sure

Please go directly to question 3.

Let's think about the last time you were visited.

a) Did this person explain why he was asking you for information?

☐ Yes ☐ No

b) Did this person give you a clear answer to all your questions?

☐ Yes ☐ No

c) Do you think this person was kind?

☐ Yes ☐ No

d) Do you think you are visited often enough?

☐ Yes ☐ No

e) Would you prefer that all your visits from DVA were by the same person?

☐ Yes ☐ No

7.3 References

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8. OTHER FACTORS AFFECTING QUESTIONNAIRE DESIGN

There are a number of other principles which apply to questionnaire design which should also be considered. The degree to which they can be applied will vary from survey to survey, and there may be some cases where the application of some of these principles may conflict. For example, ease of completion and ease of data capture may not both be attainable in a particular design. The designer is then faced with the problem of developing the best compromise in the design.

8.1 Survey Population

In some cases, the members of the survey population will have a particular characteristic which should be accommodated in the design of the questionnaire.

The desired population may be located anywhere within a much larger population and it may be necessary to contact large numbers of the general population in order to locate (i.e., to screen out) those persons or cases which constitute the actual intended survey population. Examples of this type might be handicapped persons living with their families, manufacturing plants which use a particular process, etc. Provision for this screening process should usually be incorporated into the questionnaire so that interviewers carry out the screening in the prescribed manner.

In some type of surveys, a single survey may cover various areas of an organization's activity and having a questionnaire routed sequentially to each of the appropriate departments would unduly prolong data collection. To facilitate collection in mail surveys, it may be desirable to break down the survey into several discrete questionnaires and to send them to an appropriate senior official in the organization. This official can then send out each questionnaire to the appropriate department for completion simultaneously, and can check the completed questionnaires for mutual consistency before returning them.

Questionnaires intended for completion by elderly people should be printed with a moderately-large type size because many persons in this age group are likely to have somewhat impaired vision.

8.2 Desired Level of Precision of Estimates

It is necessary to know, in advance, the desired level of precision of the estimates required for analysis, so that the data collected by the questionnaire are at a level of detail appropriate to the given sample size and sample design. The level of detail will vary with the characteristic being measured.

In the study of certain activities, there may be several distinct sub-populations involved which are suspected (or known) to participate in the activity to quite different degrees. Typical of this situation could be television watching habits of different age groups within a

family or the travel patterns around an airport of airport employees vs. airline passengers. It may be desirable (or even necessary) to identify sub-groups which have similar characteristics.

If the sub-population(s) can be identified in advance, the size of sample required to obtain a specified level of precision for the sub-population(s) will be smaller (and in some cases, significantly smaller) than if a sample were drawn from the entire population and the sub-population(s) identified subsequently by some screening process.

8.3 Comparability

The value of a survey is likely to be substantially increased if the estimates obtained can be compared with other surveys of similar populations which were conducted at different points in time (or in different locations), or with external administrative data. However, this is useful only when the definitions, subject-matter classes and units of measure are comparable. It is usually possible to provide for this comparability by using standardized definitions, units, etc., insofar as feasible when planning surveys.

In the area of social and economic surveys, Statistics Canada has developed a number of reference manuals containing standard classification systems and definitions, as well as recommended wording for the more usual types of questions. These manuals are available to all researchers in Canada (see references at end of this section).

Planners of other types of surveys, such as those dealing with technical data, should strive to use standardized terminology wherever feasible.

8.4 Confidentiality and Sensitivity

There are a number of areas where respondents may feel that questions intrude into their privacy and therefore be reluctant to or refuse to answer them. These areas include questions of age, education, income, business information, personal attitudes, anti-social activity, medical history, etc. The particular areas of sensitivity, and the intensity of refusal, will vary among different respondents and social groups.

Where such data are necessary for the survey, there are several approaches that can be used:

8.4.1 Location in Questionnaire

Wherever possible, questionnaires should begin with reasonably simple, innocuous questions which are neither intrusive nor demanding in order to get the respondent involved in answering and to establish rapport. Sensitive questions may either be carefully located with related subject-matter areas, or grouped near the end of the questionnaire. When asking a person about his/her type of work, it will appear quite natural to inquire about the range of wages or salary paid for this type of work and

where the respondent fits into this range. In cases where this technique is not feasible, sensitive questions are delayed until the respondent has completed most of the less-contentious questions. If the respondent then refuses to cooperate further, a substantial amount of data will already have been obtained.

Note: The sequencing of questions is dealt with more full in Sub-section 6.2.5).

8.4.2 Ranges vs. Specifics

Respondents will usually have less objection to a sensitive question if the question is asked in a way which permits the respondent to identify the range within which the answer falls. For example, if a question on income asks the respondent to identify into which range his/her income falls (0-\$4,999, \$5,000 to \$9,999, etc.), the response is likely to be better than where a specific income figure is requested.

8.4.3 Importance of the Survey

The degree to which respondents feel that a survey is important or that the results are likely to affect them, will have a bearing on their willingness to answer sensitive questions. Consequently, it is useful to identify clearly the purpose of the survey in the introduction to the questionnaire or have it described by the interviewer.

8.4.4 Assurance of Confidentiality

Many respondents are willing to provide data on condition that the research organization can provide assurance that the respondent's identity will not be revealed or that the data will not be released to other parties, such as business competitors.

In general, the response rate increases when respondents feel assured that the survey organization can and will maintain the promised confidentiality

Anonymity and confidentiality are sometimes misunderstood by respondents. Anonymity exists only where the identity of the respondent is not entered in any way on the questionnaire and is not available to anyone, including the research organization.

8.5 Method of Data Collection

Each of the principal methods of data collection has somewhat different needs which should be reflected in the design of the questionnaire used. Consequently, the method of data collection should be decided before the questionnaire is designed.

For mail and drop-off (i.e., self-completed) questionnaires, all necessary explanations, definitions and completion instructions should appear on the questionnaire itself or on an accompanying pamphlet. In most cases there is no opportunity for supplementing the printed instructions with spoken instructions. The wording used in these questionnaires must be easily understood and the design should anticipate all problems which are likely to be encountered by respondents. In summary, the respondent receives the package and thereafter is "on his own".

For surveys which are conducted by an interviewer, the questionnaire need not contain many of the general instructions and definitions, as these can be provided on separate reference sheets or an interviewer's manual for reference as needed by the interviewer. These questionnaires need contain only essential completion instructions, such as skip patterns where certain questions do not apply to all respondents. Questions can be more complex and specific questioning techniques (e.g. probing) can also be specified on the questionnaire.

For face-to-face interviews, the questionnaire can contain questions which are not actually asked but are completed by the interviewer, based on observation. Examples of this type of question include: type of house construction, evidence of maintenance, whether street is paved, etc. The questionnaire can also be designed for the use of flash cards or other exhibits by the interviewer. One example of the use of flash cards is, where respondents are given a card bearing a printed list from which they are asked to make a selection, usually where the list of items is quite long or the items are quite complex.

Questionnaires for telephone interviews are generally similar to those used for face-to-face interviews, but do not contain questions based on personal observation. As the interviewer can arrange to have relevant definitions, explanations, etc., arranged around the telephone, the questionnaire itself need contain very few instructions to the interviewer. For surveys containing only a few simple "Yes/No" questions, it may be feasible for the telephone interviewer to use a tally-sheet on which responses to questions are entered, instead of individual questionnaires. These tally-sheets would be similar to questionnaires, except that entry spaces would be arranged in a columnar layout, with a column for each respondent. However, tally-sheets can be used only where the range of answers can be determined in advance and the answers are quite short.

8.6 Physical Convenience

The environment surrounding the completion of a questionnaire is usually quite different from the office environment where it was planned. Consequently, the problems encountered during completion, either by the respondent or by an interviewer should be considered carefully by the designer. A good example of this is a diary-type questionnaire which has entries made on it frequently by respondents under a wide variety of environmental situations. Most diaries are in the form of a small booklet, in order to achieve the minimum handling problem for respondents, at the cost of greater data capture time required in the processing office.

In general, the convenience of completion and handling should be given greatest priority, because the response rate and accuracy of data collected are critical to the success of a survey, yet are the most difficult factors to control.

Diary-type questionnaires have been used successfully in household expenditure surveys, radio-listening and TV-watching surveys, automobile fuel consumption surveys, etc.

8.7 Response Burden

Survey sponsors seldom estimate the time required by each respondent to complete a questionnaire. When this amount of respondent time is multiplied by the number of respondents involved, the total time involved can become substantial. In view of this response burden and its potentially negative effect on quality of response and rate of response, it makes good sense to consider those factors which make this burden excessive or even unnecessary. These factors include:

8.7.1 The Number of Questions

Is each question necessary? Could some of the data be obtained from administrative or other existing records, or from a previous survey or surveys in the same general area?

8.7.2 The Length or Complexity of Questions

Are the requested breakdowns of data necessary? Will they actually be used in tabulation? Would a number of simpler questions be easier to answer and, at the same time, provide adequate data?

8.7.3 The Difficulty of Completion

Will the respondent (particularly a business respondent) be required to rework existing data or to search through old records to satisfy the questionnaire? Or will the respondent be expected to recall details months or years after the event?

8.8 Editing of Completed Questionnaires

Editing is the checking of returned questionnaires for completeness, logic, reasonableness and internal consistency. It can be done, either manually on the actual questionnaires, or by computer after the entries have been punched onto cards or tape (or both manually and by computer).

For manual editing, those items which must be mutually consistent should be so located on the questionnaire as to enable them to be cross-checked easily (i.e., quickly).

Editing is more likely to be needed for mail questionnaires than for questionnaires completed by interviewers, because in mail surveys, questionnaires are more likely to be returned only partly completed or even completely blank. In the case of personal interviews, respondents may refuse to answer some of the questions.

In some cases, a perusal of completed questionnaires may reveal that a respondent (or even a trained interviewer) has misinterpreted questions in an obvious manner or placed answers in the wrong entry spaces. It may be possible to correct these errors by inference from the answers given to other questions, before the questionnaires go to data capture.

8.9 Coding

Codes are symbols (usually digits) which are used to identify categories, ranges, etc., to facilitate tabulation. In surveys where the categories, ranges, etc., are known in advance, it is usually desirable to have the appropriate code pre-printed beside each entry space on the questionnaire. This can eliminate the need for manual coding. However, the decision to pre-print or not to pre-print codes on the questionnaire depends on a number of circumstances unique to a particular survey, such as the number of open-ended questions where the nature of the answers cannot be anticipated.

The process of coding consists of manually converting the answers provided by respondents into prescribed codes. The entry spaces for these codes are generally arranged in a narrow column down the right edge of the questionnaires or on a separate coding sheet.

Example of a coding column on a questionnaire:

Province _____	<input type="checkbox"/> <input type="checkbox"/> 21
Occupation _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 24

Example of a coding sheet, using the same questions as above:

Prov.		Occup.		
20	21	22	23	24
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In surveys where the frequency distribution is not known in advance, the code categories may not be determined until a tally has been made of the responses on the first 5% or 10% of the completed questionnaires. This approach requires that these questions be coded manually.

8.10 Data Capture

Most surveys are designed to collect answers which can be tabulated. This requires that every item of data which is to be tabulated must be read from the questionnaire and transcribed onto a punched card, magnetic tape by an operator at a keyboard, or transcribed manually onto a code sheet or tally sheet.

Where data are keyed directly from questionnaires, or code sheets, the machine operators do not have time to read individual responses for sense. Instead, they concentrate on designated entries, codes and related keying instructions. For this reason, data capture entries should be located in a standardized location throughout a questionnaire, preferably separated by open space from other printing. (See sub-section 7.7 for more complete treatment of data capture considerations.) Operators usually prefer to have entry spaces arranged in columns, with the card column or field identifiers suitably identified in small numbers near each entry. However, there are many possible variations, and the questionnaire designer should consult with the data capture staff before completing the design.

For manual transcription of data onto code sheets or tally sheets, most of the same principles apply, as for keying, although it is possible to do editing at the same time.

8.11 Tabulation and Analysis

In order that questions be structured to collect data in the desired formats, ranges, etc., the intended types of tabulation and analysis should be known when the questionnaire is designed. It is often useful to construct dummy tables with detailed column headings and line captions to enable the researcher to identify all the variables which will be needed to carry out the intended tabulations and cross-classifications. If this is not done in advance, the researcher runs a risk of learning too late that a critical type of variable was not collected and, therefore, that the intended tabulation and analysis cannot be carried out completely, or that a particular variable was collected but was not needed to produce the desired tabulations. Unnecessary questions impose needless response burden on respondents.

8.12 References

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9. SOURCES OF ERROR IN SURVEYS

As a starting point, it is important to understand the two major classifications of survey related errors. Survey related errors may be either random or systematic. Random errors have no decided pattern and do not favour a particular result. Due to this 'randomness' in the error, all results have an equal chance of occurring. Systematic error (also called 'bias') occurs where there is a tendency to collect, process or interpret data in a way that favours particular sets of results. The effect of this systematic error is often cumulative and usually results in significantly distorted findings which deviate from the true or real values.

There are several potential sources for both types of error in a survey. The following describes the likely sources to examine when trying to reduce the systematic error in a survey. It will become apparent, from the nature of the sources, that the likelihood for error can only be minimized, and never eliminated.

9.1 The Data Collection Method

When deciding how and where the data are to be collected in a survey, it is essential to carefully consider the objectives and the information requested. Data collection methods are not usually interchangeable and the researcher must be certain that the most appropriate method and location have been chosen. For example, a complicated attitudinal questionnaire may best be handled by a trained interviewer in face-to-face contact with the respondent in the respondent's home. This would make it easier for the respondent to understand extensive instructions and would provide him with an 'unthreatening' atmosphere. If research is required of the respondent (e.g. finding copies of fuel oil bills, or assembling details of a business operation) a surprise on-the-spot personal interview will not collect the precise type of data needed. A respondent will be inclined to offer guesses rather than keep the interviewer waiting while he rummages for the required receipts.

Consider a detailed interview about political views of housewives to take place in a large shopping mall. A housewife surrounded by her children may not provide thoughtful detailed answers. This is a good example (and not necessarily an uncommon one) of an inappropriate location for such a study.

The choice of an inappropriate collection method and/or location will be the sources of a great deal of systematic error or bias.

There are a number of collection methods and combinations of methods from which to choose. A few samples are:

- telephone interview
- face-to-face interview
- interviewer drop-off and pick-up with self-enumeration
- mail-out/mail-back self-enumeration
- combination interview and self-enumeration.

Unfortunately they all have shortcomings. Even the most appropriate method comes with built-in sources for several other types of error.

The following is a list briefly describing some of the types of systematic errors that can occur in the interview method.

Interviewers have been known to complete questionnaires themselves and submit them as completed interviews. (This is particularly common when they have encountered problems in locating the individual selected by the sampling procedure.)

Interviewers can fail to follow the specified sample plan by approaching the 'house next to the sample house' (i.e., the one that doesn't have the snarly watchdog) or settling for the 'wrong' person to interview.

Interviewers sometimes fail to follow instructions on how to ask questions (often due to their lack of understanding of the instructions). They can, by their behaviour when asking the questions, by intonation or by commenting on the questions or answers affect the answers they receive. As well, they can omit questions by inadvertently misreading skip instructions.

The interviewer-respondent interaction can bias results. The interviewer, from his/her appearance or attitude, may unknowingly lead to a certain pattern of responses or discourage responses even to a point of complete non-response (e.g., an anglophone interviewing a francophone).

Interviewers are sometimes forced to 'make decisions' or adopt improper procedures during an interview due to unclear instructions or instructions which do not prepare the interviewer for all possible awkward situations.

Finally, interviewers can make recording errors by writing down incomplete or wrong answers even if the questions have been asked and answered correctly.

Many of these sources of error can be minimized by careful control procedures, such as: careful drafting of interviewer training manuals; careful and thorough training of interviewers; close supervision during the first few interviews (by a supervisor accompanying the interviewer for immediate correction of errors); monitoring of all interviewers (e.g. by verification procedures such as re-interviewing a sample of each interviewer's respondents); and interviewer de-briefing at the end of data collection to detect apparent or real problems the interviewers met.

A self-enumeration type of questionnaire depends on the clarity of its written instructions and the motivation of the respondents to read and follow them to obtain correct responses. If the instructions are not clear or are too complex or are long, respondents may not follow them. As mentioned elsewhere, it is frequently helpful to repeat instructions in a self enumeration questionnaire directly before the question to which the instructions apply.

In a diary-type enumeration questionnaire, bias can arise from the effect of the questions on the behaviour which is being measured. Respondents asked to record purchases or other behaviour may feel that they should be conscientious. They may buy items different from usual or watch more or different TV, in order to have more to report and thus show themselves as co-operative respondents (particularly if an incentive has been offered). At an extreme, there might be outright falsification of the items reported.

Rates of non-response are usually higher for self-enumeration questionnaires, particularly where there is no personal contact by an interviewer, such as in mail out/mail back surveys. For many mail surveys, response is likely to be less than fifty percent from a single mailing of the questionnaire. The difficulty then arises in determining whether the characteristics under examination differ between those who do respond and those who do not respond. It may be possible to check demographic characteristics against Census data, and introduce weighting procedures to correct for deviations from general population characteristics. It may even be possible to do the same for behaviour by comparing results with data from other sources. It is probably not possible to correct for differences in attitudes, so that a bias of some kind and unknown extent is likely to be present.

9.2 The Collection Instrument

Assuming that the most appropriate method and location of collection have been established, and the sources of error from them minimized, the next source of errors to be examined is the collection instrument. (Note that the design of the collection instrument will be affected by the choice of collection method and, that the choice of method of collection will be affected by the design of the collection instrument. There is no 'best' ordering of these two procedures. Each must be accomplished with consideration of the other.)

Error, particularly systematic error, can occur in the collection instrument (i.e. questionnaire) from wording of instructions and items (see section 5), sequencing of instructions and items (see section 6) and from the layout of the instructions and items (see section 7).

As well, bias can come from unreliable or invalid questioning techniques (see section 4). Frequently, this is an error source that is ignored or not considered serious enough to deserve the attention it really does merit. Unless the survey designer is prepared to do all the development and testing work essential for a new set of words or phrases for

attitudinal scales, he should make use of scales already developed and tested by others. If the researcher develops his own attitude-scale questions, he must test to ensure that the scales are reliable (i.e., consistent among matched groups) and valid (i.e., measure what they were designed to measure). Without this testing, the major error of measuring an attitudinal item more than once, is likely to occur. This can lead to a false impression of the intensity of an attitude or to the conclusion that more than one aspect of the attitude has been measured. For example, in studying interpersonal communication, it could be misleading to accept measures of attitude towards cooperativeness, friendless, and lack of conflict, as if they were separate items, when further analysis might demonstrate that respondents do not perceive much of a difference in the meanings of these terms. Sometimes, the likelihood of lack of differentiation by respondents may not be obvious, and a variety of statistical techniques (e.g., multidimensional scaling techniques, such as discriminant analysis, cluster analysis, factor analysis) are available to help reveal underlying groupings of items and the extent to which they are effectively measuring the same concept or dimension. (Reference: Wish, M. and Kaplan, S.J., "Toward an Implicit Theory of Interpersonal Communication", in *Sociometry*, 1977, Vol. 40, No. 3, pp. 234-246.)

If data are to be collected from two or more language groups, and the questionnaires, interviewer training manuals, coding manuals, etc., are prepared initially in one language it is essential to consult frequently with translators on anticipated problems in translation. Subtle shades of difference in meaning can occur or there can be outright mis-translations. For example, in one survey the term 'nursing' was translated to the French term 'allaitement' (which means breast-feeding babies). The survey was examining nursing in the sense of caring for the ill and the translation should have been a phrase such as 'profession de garde-malade'.

9.3 Selecting the Respondent

The respondent unit and sample selection procedures must be carefully determined in order to avoid bias.

The respondent unit must be suitable for the research objectives: for example, proxy response (e.g., from the housewife for all other family members) may not be suitable if the respondent does not know the experiences, behaviour or attitudes of those for whom the response is being given.

Bias in survey results can sometimes be traceable to complete non-response from respondents, because they were not available at the time of the interview or were untraceable. For example, single males aged 18-25 are at home much less than married males aged 45 or over. If the survey budget cannot afford very many repeated trips to the homes of young single males to find them at home for interview, they may be underrepresented in the survey. Complete non response may occur in business surveys because

small businesses cannot afford the time or expense of compiling the information requested, or they may keep their records in less detail than larger businesses so that they are unable to compile the information requested. Some of the procedures used to anticipate and correct for this bias include weighting in the sampling procedures or the use of 'not at home' weights such as in the Politz technique.

Another source of error in the selection of respondents can come from the sample frame used. If the frame is incomplete, part of the population will be underrepresented. For example, surveys which use telephone directories as the frame omit households without telephones, new listings, and unlisted households.

Error can be introduced if interviewers or other field staff fail to follow the specified sampling plan.

In business surveys, questionnaires are often sent to the 'President' or the 'Accountant' if no other company officer is known. There is no guarantee that these particular officers will be able to respond to all the types of questions that are asked of businesses. For example, few presidents would be able to provide (without the aid of subordinates) details on shipments etc. Also with such general addressing there is little control over the actual choice of respondent.

The same problem occurs with self-enumerated questionnaires. Bias can be introduced by the lack of control over selection of respondents especially when general addressing such as 'to the householder' is used. Respondents may consult with others to refresh their memories or may test their responses on others and thereby be influenced/biased by the memories and opinions of others. As well, there is no way of ensuring that the individual who responds will, in fact, be the person to whom the questionnaire was addressed.

Further bias arises from the fact that those most interested in the subject of the survey, those with strong feelings for or against the topic under research, those with time available (e.g., retired people) and people who lead relatively inactive lives are more likely to reply to questionnaires than is the remainder of the sample population. In order to maximize response from the whole selected sample, reminder letters, second and third mailings of the questionnaire, telephone follow-up reminders and possibly even telephone or personal interviews can be employed.

9.4 Conclusion

As indicated in the introduction to this section, the likelihood for systematic errors can be minimized but never eliminated. It should be apparent from the descriptions that to eliminate error contributed by, say the collection instrument, one would have to eliminate the instrument itself. To eliminate interviewer error, one would have to abandon the interview method and so on.

Another frustrating trait of these systematic errors is their elusiveness. Their effects on the accuracy of the results are virtually impossible to measure, primarily due to the inability of the researcher to control the activities that give rise to them. Thus, researchers must settle for weak estimates of the systematic errors in their results.

10. THE PRETEST

Just because all principles described in the previous sections have been followed, there is no guarantee that the proposed questionnaire will fully satisfy the objectives of the study, no matter how conscientious the researcher has been in designing the questionnaire. There are almost always unforeseen problems that occur in the administration of a questionnaire. As a result, it is essential that a pretest of the questionnaire be implemented for all new surveys and for already existing surveys on which substantial modifications have been made in order to determine whether the research objectives are likely to be met by the proposed questionnaire.

Some aspects of the questionnaire that the researcher may test are the following: the wording, sequence and layout of the questionnaire to determine whether the questions and their flow are understood by respondents and interviewers; the necessity for inclusion of particular questions; the choice of types of questions; the use of specialized questioning techniques such as ranking or rating questions; the structure and definition of response categories; the degree of usage of the "other" category in questions; the ease of administration of the questionnaire; the time of administering various sections of the questionnaire; translation of the questionnaire; the possibility of bias in the questions; the nature of ethnic, regional or linguistic differences; the reasonableness of the questionnaire with respect to its demands on the respondent; the suitability of the questionnaire for measuring the concepts on which measurement is required; letters of introduction or introductory procedures; and the suitability of the method of collection.

A pretest should be done on a small sample of respondents (usually twenty to thirty) from the target population. It is preferable that the respondents be selected from the various subpopulations of the target population where differences or problems are likely to occur. Possible variables for definition of the test subpopulations are geographic region, educational background, age, sex, language, size of firm and type of industry. Depending on the particular purposes of the pretest, either a probability or a non-probability sampling scheme may be required for the selection of respondents, although in most cases, the latter is employed. One possibility is to use a focus group discussion of the questionnaire as a part of the pretest procedure.

The method of collection used for the pretest should be identical to that planned for the main survey. However, a personal interview is recommended for at least a portion of the pretest respondents so that the interviewer can then record the respondents' reactions, both verbal and non-verbal, as well as their own suggestions and impressions. After each test interview, the interviewer can discuss difficulties that the respondent had, the interpretation of questions and response categories, and so on. These difficulties can then be discussed with the designer of the questionnaire, for example, in the context of a

meeting among the questionnaire designer and the pretest interviewers to debrief them on the interviews. For some pretests, it may be preferable to use experienced, skilled interviewers in order to maximize the usefulness of the pretest.

The 1974 Survey of the Newfoundland Resettlement Program, designed by the Statistical Services Division of the Department of Regional Economic Expansion included a pretest of its questionnaire and modifications based on the pretest results were made for the main survey. Example 10.1 below shows three questions from the pretest questionnaire and the revisions made to them for the main survey.

Example 10.1

Survey of the Newfoundland Resttlement Program (Department of Regional Economic Expansion)

Pretest:

26. HOW LONG WAS IT BEFORE YOU COULD MOVE INTO YOUR PERMANENT DWELLING?

NUMBER OF WEEKS _____

27. WHAT WAS THE REASON FOR THE DELAY?

1. COULD NOT FIND A DWELLING
2. DELAYS IN MOVING HOUSE
3. LACK OF SERVICES FOR DWELLING
4. OTHER, SPECIFY _____

28. WHERE DID YOU AND MEMBERS OF YOUR HOUSEHOLD STAY IN THE MEANTIME?

Main Survey:

14. HOW LONG WAS IT BEFORE YOU COULD MOVE INTO YOUR DWELLING?

LENGTH OF TIME _____

15. WHAT WAS THE REASON FOR THE DELAY?

- | | |
|----------------------------|--------------------------------|
| 1. DELAYS IN MOVING HOUSE | 6. SERVICED LAND NOT AVAILABLE |
| 2. COULD NOT FIND DWELLING | 7. OTHER, SPECIFY _____ |
| 3. LACK OF SERVICES | _____ |
| 4. BUILDING/RENOVATING | U. UNKNOWN |

16. WHERE DID YOU STAY IN THE MEANTIME?

- | | |
|----------------------------------|--------------------------|
| 1. RENTED A DWELLING | 4. STAYED IN HOTEL/MOTEL |
| 2. STAYED WITH FRIENDS/RELATIVES | 5. OTHER, SPECIFY _____ |
| 3. BOARDED | _____ |
| | U. UNKNOWN |

In example 10.3, the definition of full-time work was included in the question itself in the 1979 survey while the 1978 survey provided the definition in the interviewer's manual. This was done to make the questionnaire more self-contained and to reduce potential error in the response to the question.

Example 10.3

Annual Work Patterns Survey (Labour Force Survey Division, Statistics Canada)

1978 Survey:

12 WAS THIS WORK IN 1977: ENTIRELY FULL-TIME, ENTIRELY PART-TIME, OR SOME FULL-TIME AND SOME PART-TIME?	
Entirely full-time	¹ <input type="radio"/> go to 28
Entirely part-time	² <input type="radio"/> go to 18
Some full-time and some part-time	³ <input type="radio"/> go to 16

1979 Survey:

12 WAS ...'S WORK IN 1978 ENTIRELY FULL-TIME, ENTIRELY PART-TIME OR SOME OF EACH? BY FULL-TIME I MEAN 30 HOURS OR MORE A WEEK.	
Entirely full-time	¹ <input type="radio"/>
Entirely part-time	² <input type="radio"/>
Some full-time and some part-time	³ <input type="radio"/>

In the 1978 National Survey of Driving Habits, sponsored by the Road and Traffic Safety Branch of Transport Canada, the decision to change the layout of the diaries contained in three-ring binders from sideways to vertical to facilitate respondent handling and keypunching resulted from the pretest.

Depending on the complexity of the overall survey methodology, and the time and budget available, it may be necessary to test more than the questionnaire component of the survey. Some procedures or concepts that may need testing are the following: the appropriateness of a survey to resolve the problem under consideration; the likelihood

of controversy arising from the survey; the adequacy of sampling instructions; the variation in the population (for purposes of sample size determination); the validity and reliability of attitudinal items; the efficacy of interviewer training; the effectiveness of the field organization; coding; appropriateness of the questionnaire for data capture; and cost. Often, a small replica of the whole main survey may be implemented to test its various components and their interrelationship. This is frequently called a pilot survey.

It may be useful for the researcher (or research team) to be directly involved in the pretest/pilot survey to the point of accompanying interviewers or even conducting interviews. Much can be learned in the field concerning that which is realistic for implementation.

After an evaluation of the pretest/pilot survey, revisions can be made to survey procedures and documents. In fact, the researcher may obtain evidence, as a result of the pretest/pilot survey providing him/her with a more realistic outlook on the potential of the main survey. Objectives may even need revision. If substantial changes take place, another pretest/pilot survey should be carried out.

Generally, respondents approached for the pretest/pilot survey should be excluded from the main survey. This may introduce a bias (which is usually minimal unless the size of the population is small) into the survey results, but is recommended as a public relations gesture to alleviate the potential burden of questioning respondents on the same subject matter on two occasions relatively close in time. Also, in the case of attitudinal surveys, respondents may become more educated in the concepts introduced in the pretest/pilot survey, a situation which may cause bias in the main survey. However, if no changes are made to the survey documents or procedures as a result of the pretest/pilot survey and depending on the sample selection procedures used in the pretest/pilot survey and the main survey and on the time reference period required in the main survey, it may be possible to include the results of a pretest/pilot survey in the results of the main survey. However, such inclusion is rarely done in actual practice.

The pretest/pilot survey is an often-neglected quality control procedure. It will almost always suggest improvements or will at least give the researcher some assurance that the main survey, a much more expensive proposition, will likely proceed fairly efficiently. Of course, there is never any guarantee that all problems will be solved, but most major ones should be. A pretest/pilot survey need not be expensive and need not require a great deal of time for implementation and is recommended for all untried components of a particular survey.

10.1 References

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